Human Development and Economic Activity:

Government Expenditure and Health in Cuba and Kerala

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Abstract

The biophysical limits of the earth are used as a starting point to explore the pursuit of health, as a component of human development, at stable levels of economic activity. The crux of the matter lies in the relationship between government expenditures in health, their impact on health outcomes and the government's fiscal capability to maintain the expenditures. Evidence from the successful pursuit of health in Kerala, India and in Cuba, provides several observations, namely: health outcomes and growth are not closely linked; health can be pursued at low levels of economic activity; fiscal crises are not closely linked with government health expenditures nor with levels of economic growth; and finally that government health expenditures can reach points of diminishing marginal returns. Together these observations diminish the importance of economic growth in the pursuit of health and permit hypothesising about pursuing good health outcomes at stabilised levels of economic activity.

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Chapter 1:

Introduction

> "The apparent goal of the present world system is to produce more people with more (food, material goods, clean air and water) for each person. [...] if society continues to strive for that goal, it will eventually reach one of many earthly limitations" (Meadows *et al.*, 1972, pp.86-87).

While many of the conclusions in *The limits to growth* written by Meadows *et al.* have since been contested, and the above statement fails to identify the driving force of the development process (the search for private profit), it does capture one aspect of our world system fairly accurately: the impulse to expand production (the view that economic growth is imperative). There is a general trend of humans expanding their exploitation of the world's resources, yet the resources upon which they draw are not simultaneously expanding. Indeed many of them are being depleted and are non-renewable. Environmental science explains that there are limits to growth (although not quite the same as those predicted three decades ago). However, much of the self-acclaimed sustainable development literature disagrees with the concept of eventual absolute limits to growth[1]. Limited growth can be perceived as an impediment to human development in the South[2].

The link between economic growth and human development is not as simple as it first appears. Levitt (2005) notes that Cubans have better access to healthcare and education than do Singaporeans and South Koreans. Sen contrasts the inferior life

[1] See for example the World Commission on the Environment and Development's 1987 report, well known for its definition of sustainable development, which simultaneously promoted economic growth: "it is essential that global economic growth be revitalised. In practical terms, this means more rapid economic growth in both industrial and developing countries" (WCED, 1987: 89).
[2] For a discussion of 'environmentalism of the poor', see Sachs, 1999 or Moore, 2009 (*inter alia*).

expectancies of African Americans with those of their counterparts in China, Costa Rica, Sri Lanka or Kerala (see for example Sen, 2001). Both Levitt and Sen note the ability of certain countries to pursue relatively high levels of human development despite their lower levels of economic activity.

This observation lies at the heart of the matter that will be pursued here. It is important to distinguish and separate two concepts that can easily be thrown together but whose separation can have important implications: economic growth and economic activity. Economic activity is a level variable, while economic growth is a rate of change. Economic growth will be used to refer to the growth of the economy as measured by increasing Gross Domestic Product (GDP). Economic growth refers to expanding levels of economic activity. Hereinafter, levels of economic activity will be used to refer to the amount of GDP per capita. The World Bank classifies countries by levels of economic activity in its high, upper-middle, lower-middle and low income classification (World Bank, 2010). Accepting that there are biophysical limits to economic growth requires the use of terms such as levels of economic activity. Economic growth and economic activity can move in different directions. In other words, it is possible to have high economic growth at low levels of economic activity, or vice versa to have low economic growth at high levels of economic activity.

The rest of this chapter will be organised as follows: an examination of the nature of the biophysical limits to economic growth; the identification of a problem to study; an outline of the methodology; a discussion of data limitations; the thesis statement; and finally an outline of the structure of the argument.

Limits to growth as a starting point

The goal of this section is not to define the limits to economic growth induced by the finite nature of the bio-physical earth in absolute terms, but rather to acknowledge their existence[3]. This section will first outline the current ecological overshoot, proceed to explain different conceptualisations of the environment and finally present evidence that counters the opposing argument.

Unlimited expansion is not possible due to the biophysical limits of the earth. Humanity is in a position of ecological overshoot, meaning that it is using natural resources at rates much quicker than those of regeneration[4]. This ecological overshoot is only possible in the short term, due to the liquidation of stored natural capital,[5] which has accumulated over billions of years (Weis, forthcoming; Martinez-Alier 2009;

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[3] A somewhat simplified argument is made in the paragraphs that follow. The discussion centers itself on the eventual limits to economic growth, but the author recognises that they are not absolute in nature. Economies can depend to varying degrees on the environment. It is possible to have some economic activity that is separated from resource use. Thus it is important to acknowledge the possibility of economic growth without growth in resource use. Moreover, dollar values of outputs may be misleading indicators of the demand for inputs. However, it is impossible for an entire economy to be 'delinked' from the environment. As a result there are limits to economic growth, but this does not mean an absolute end to any economic growth. A more detailed discussion of this complex relationship can be found in Daly (1996) or Victor and Rosenbluth (2007).

[4] Not all humans contribute equally to this overshoot (see for example Kestemont *et al.*, 2006; Daly, 1991). The current overshoot is driven by the North and the NICs (Newly Industrialised Countries), whose per capita use of resources is significantly greater than that of their counterparts in the South. For the world to consume at Northern standards of consumption, estimates posit the need for 5-10 additional planets (Kestemont et al., 2006). The case of the NICs is slightly different as they are not historically responsible for the ecological overshoot, however they are major contributors today. South Korea exemplifies an NIC transformation: in 1961, South Koreans' demand on their environment could be met by their country, but after tremendous economic growth, in 2002, South Koreans required almost eight South Koreas worth of resources (Global Footprint Network, 2007).

[5] Capital, defined as the 'sum total of society's productive resources', in relation to 'development' takes diverse forms, to wit: *natural* capital, such as land and water; *physical* capital, such as tools and equipment, infrastructure and transport, shelter, sanitation and energy; *financial* capital, such as income, savings and credit; *human* capital, such as education, skills, knowledge and health; and *social* capital, such as households, networks, formal groups, institutions and information.

Wackernagel & Rees, 1997; Beaumont, 1997; Schneider & Kay, 1995). When the economy grows, it grows into a (relatively) finite world (Daly, 1996).

Typically economists, even those with a concern for ecology, view nature merely as a complex system of resource inputs for the economy. In a standard rendition of the basic economic diagram, there is a circular flow of income between households and firms, with no inputs or outputs. Replenishment in such a context appears not to be dependent on the environment. Many criticise this omission and provide alternatives to correctly illustrate it, noting that human activity is limited by the finite nature of the environment from which it draws resources and deposits waste (Martinez-Alier, 2009; Shiva, 2005; Daly, 1996; Georgescu- Roegen, 1993; Daly, 1991; Meadows et al., 1972). Ecologists appropriately conceptualise the economy as a sub-system of a more inclusive system—the earth, or from an indigenous knowledge perspective 'mother nature'.

It is necessary to address objections stemming from proponents of the growth paradigm, who claim that scarcity is a myth, and that sustainability requires a different type of growth: "the key to growing sustainably is not to produce less but to produce differently" (World Bank, 1992, 36). There are two key strategies proposed by growth advocates to bypass resource depletion: substitution and more efficient technology. Each will be addressed in turn below.

It is argued that as one resource is exhausted, human ingenuity will endlessly find and create substitutes. The price mechanism will be able to reflect scarcity and thus facilitate endless substitution (Anand & Sen, 2000b). The World Bank is a proponent of

the fungible nature of capital; that is, that human, natural, social and man-made capital can be substituted for each other (IBRD, 2008). The argument does have a historical precedent. For instance, rising copper prices reflected the increased scarcity of copper and substitutes were found, allowing for continued economic expansion (Clapp & Dauvergne, 2005).

However, Daly observes that the relation between natural and man-made capital is complementary, not one of perfect substitution. A shortage of one factor can limit the productivity of another. Daly argues that the relative abundance of different factors of production has changed as humans moved from an empty to a full world (1996). In the past, when the human presence in the biosphere was low, man-made capital was the limiting one. However, natural capital is becoming increasingly scarce and has become the limiting factor[6]. He notes that the productivity of man-made capital is limited by the more scarce natural capital, demonstrating that endless substitution is not possible: "what good is a saw mill without a forest?" (Daly, 1992, 2).

Technology of increased efficiency has an important place in the substitution argument (Clapp & Dauvergne, 2005). Yet, as early as 1865, Jevons observed that increased efficiency does not lead to decreased consumption: "*It is wholly a confusion of ideas to suppose that the economical use of fuel is equivalent to a diminished consumption. The very contrary is the truth*" (Jevons, 1906: 140). Jevons examined the effect of the efficient steam engine on the use of coal. The end result of increased efficiency was a falling price, signalling both firms and consumers to use more coal. Linked to this is the 'rebound effect', which refers to consumers increasing their

[6] See Moore (2009) for a discussion of the shrinking frontier that capitalism depends on.

consumption, due to savings from a decrease in price resulting from efficiency gains in another resource (Gottron, 2001). The effect on total resource use depends upon whether increased efficiency or increased consumption is more significant.

Longitudinal and cross-sectional surveys of the world tell a story of technological advance that occurs in conjunction with increases in consumption (Ponting, 1993). Continued growth in material consumption eventually overrides the benefits in efficiency. In 1992 *The Ecologist* observed that while energy use per dollar of GNP decreased in OECD countries by 23% between 1973 and 1987, *total* energy consumption increased by 15 % between 1975 and 1989 (Wackernagel & Rees, 1997). Similarly, the United Nations Industrial Development Organisation (UNIDO) studied the potential decoupling of environmental pressure and the causal economic activity through technological advances. Their findings show that relative decoupling does take place (gains in efficiency), however absolute decoupling (a decrease in environmental pressure resulting from the gains in efficiency) does not occur for the 1990-2002 period for 'developing countries' in energy use, water use or CO_2 emissions (Luken & Van Rompaey, 2007). Thus, substitution and technological advance are not sufficient to bypass the biophysical limits of the earth.

Problematic

There are an estimated 1.4 billion people living in extreme poverty and over one billion people worldwide are hungry (UN, 2010). The most recent report on the Millennium Development Goals shows that the world is behind schedule in other areas, including

maternal health and access to good sanitation. The Secretary General of the United Nations, Ban Ki-moon, urged world leaders to focus on several fronts at the release of the report, one of which continues to be economic growth.

> "Economic uncertainty cannot be an excuse to slow down our development efforts. It is a reason to speed them up. By investing in the MDGs, we invest in global economic growth. By focusing on the needs of the most vulnerable, we lay the foundation for a more sustainable and prosperous tomorrow"(UN News Centre, 2010).

Economic growth is presented as one of the main avenues out of lives constrained by poverty. The emphasis on economic growth has been challenged by many development paradigms. Here, we will focus on the Human Development approach. This approach while de-emphasising the paramount importance of economic growth, like many other paradigms, turns to economic growth as a mechanism to achieve human development goals. For people living in extreme poverty a certain type of economic growth has the potential to bring relief to their lives. The crux of the matter to be explored here is that Human Development has not considered that there may be 'enough' economic growth and that human development could be pursued at varied levels of economic activity.[7]

It is the continued reliance on economic growth in development studies which places a majority of schools of thought in development, including the Human Development framework, in an ontological deadlock with environmental science. The

[7] Human Development has a nuanced argument – they advocate a certain type of economic growth, alongside other changes as well. However, amendments aside, the basic tenet is 'more growth is better for Human Development than less growth'. Evidence of the importance given to economic growth will be presented in the second chapter and can be found in multiple Human Development Reports.

former relies on economic growth while the latter stresses the impossibility of infinite expansion. Seriously pursing development requires moving beyond this impasse. Eventually limited economic growth has enormous implications in the North and the South and raises difficult questions about distributional justice[8]. This study separates itself from the larger debate and explores the possibility of pursuing human development at stabilised levels of economic activity. The level of economic activity itself is not the issue, although this will eventually need to be determined.

The study is a theoretical exploration of the current underlying assumption that the pursuit of human development requires unlimited economic growth. The scope of such a query surpasses the requirements of a Master's thesis. As such, we will limit ourselves to the exploration of one aspect of human development, health. This research thus centers itself on the following question: Does the pursuit of health require unlimited economic growth, or can health be pursued at stabilised levels of economic activity?

The ability of the government to impact health outcomes (the impact of its spending on health and its ability to spend on health) will indicate whether the pursuit of health rests on unlimited economic expansion or not. Table 1.1 sets the tone of the discussion to follow, as it demonstrates the incongruence between health spending and health outcomes. Thailand and Peru for instance spend very different amounts per capita on health, yet have similar life expectancies. Similarly, Pakistan and Uganda invest

[8] This author is of the opinion that the North (and NICs) must decrease their use of natural resources as sources and sinks by an amount that would not only rectify the current overshoot, but which would also leave space for the South to increase its use of resources (within limits). For further literature on the pursuit of human development amidst scaling back in the North, see: Orr, 2004; Surowiecki, 2005; Schweitzer, 1987; Thoreau, 1992; Dasgupta, 1996; Gandhi, 1965; Goulet, 1996; Latouche, 1992; Trainer, 1985; Daly, 1996. A discussion of the finer strands of distributional justice will be left for elsewhere (See Agyeman, 2005 for example). Here, we limit ourselves to the exploration of whether human development is possible within eventual limits.

comparable amounts in health, yet Pakistanis can expect to live a full decade longer than Ugandans. This begs an unaddressed question: do per capita government expenditures need to continually increase to facilitate the pursuit of human development?

Table 1.1 Health Spending and health outcomes: the paradox

Country	Government expenditure on health (in per capita PPP international $)		Life expectancy		
Year	2000	2006	1990	2000	2007
Thailand	97	170	68	68	70
Peru	123	184	69	72	76
Pakistan	8	8	58	62	63
Uganda	12	18	49	46	48
Malawi	17	43	48	47	50
Ethiopia	10	16	49	53	57

Source: WHO (2009)

Variables and methodology

While there are many important components of material human development, health has been selected due to its supreme importance. Health is both intrinsically and instrumentally important to human development. Without health, life is cut short and is filled with suffering. In a longer life, one is able to pursue more human flourishing *ceteris paribus*. However if this extended life is one of continual illness, it impedes human development. Most other aspects of human flourishing – employment, education, play, being part of a community, etc – are rendered more difficult in the absence of good health.

Health is a component of human development that requires economic activity. It is impossible to imagine good health in the total absence of economic activity, or in

crushing poverty. Being healthy requires resources. It is not merely a one-time investment of resources either, but a continued investment over the lifespan. It is therefore of interest to study the economic inputs necessary to achieve and maintain good health. Finally, health is selected for study as both individual and government financial inputs can influence health. It will be demonstrated that health reflects all the major debates in the larger question of the pursuit of human development in a context of limited economic growth.

Health will be used to refer to a physical state of health, which is more than the absence of illness. The duration of life and the quality of life during that time are important components of health. The following indicators of physical health will be collected: life expectancy at birth and infant mortality rate (per 1000 live births). These are frequently used indicators of health in a population (Price & Hawkins, 2005). Life expectancy is a good indication of general levels of health and infant mortality is an indicator that is more responsive to sudden changes, thus providing a more subtle analysis (Panikar, 1979). While morbidity is undoubtedly important, it will not be measured in this study. It is difficult to measure accurately over time, as increased access to health facilities increases reports of morbidity. Comparisons between different locations or the same location over a time period are nearly impossible to carry out accurately as a result. It should be noted that mental and spiritual health are important parts of human development; however, they are more difficult to quantify and may rely even less on economic activity than physical health and thus can be excluded from this study.

There is an important distinction to be made between the impact of economic growth on health (and the government's ability to finance it) and the impact of levels of economic activity on health (and the government's ability to finance it). In Human Development literature, the two tend to be addressed jointly, rather than as separate issues. Human Development literature acknowledges that health can be improved at low levels of economic activity and low levels of economic growth in the short term, but posits that low economic growth over a long period of time disables governments from maintaining the necessary health expenditures. The idea is that economic growth increases governments' ability to spend. At higher levels of economic activity governments should be able to spend more *ceteris paribus*. The key question relating to the premise of the thesis of eventually limited levels of economic activity, is: do governments need to make increasing investments in health to achieve good health?

The above discussion identifies the key variables needed in this study. The first is health and has been adequately explained. The second is government expenditures on health, which will be measured by the budget allocated to health. It is the per capita expenditure which is of most interest to this study. The third variable is fiscal (im)balances. Data indicating the size and the cause of the imbalance is needed. Finally, economic growth and the level of economic activity need to be identified. Levels of economic activity and economic growth will be measured by the per capita Gross Domestic Product (GDP) (and the in the case of Kerala the State Gross Domestic Product (SGDP).

To determine a causal relation or correlation between economic growth and health or government spending and health, many studies are cross-sectional. The problem is that while they trace a general relationship, they fail to account for outlier cases. These broad cross-country analyses are usually not longitudinal and as a result, they offer a snapshot of tendencies across countries, but fail to consider other factors which are recognised to impact health, such as the quality (versus quantity) of spending and equality or poverty reduction. They miss the finer nature of the relationship (Ghai, 2000).

For this reason, a case study design will be employed in this study. A case study is "useful when it explores a crucial, deviant or negative case that will shed light on an established theory" (Schrank, 2006, 173). The case study can capture nuances that other research methods may overlook. Berg (2004) explains that the purpose of the instrumental case study is to provide insight into an issue or to refine a theoretical explanation. As such, the case serves a supportive role, against which the actual research interests play out. The case is selected to assist the researcher in understanding a theoretical question. The cases of Cuba and Kerala, India stand out when compared to other countries in the relationship between economic growth, government expenditures and health. Both governments have implemented health systems based on preventative and primary health care and have achieved good health outcomes at relatively low levels of economic activity. As a result they provide interesting cases to explore the research question, especially relating to government expenditures, economic activity and debt. The same longitudinal data will be collected for both Kerala and Cuba on an annual basis, when available, starting in 1959 in Cuba and 1957 in Kerala. Both dates mark significant

changes: the Cuban revolution and the formation of Kerala as a state. Their health achievements contradict conventional Human Development theory that high levels of economic activity are necessary to maintain and achieve good health outcomes through government expenditure. Particular attention will be given to the periods of economic stagnation and regression experienced. However, while these are periods without economic growth, they are not the same as planned stabilisation of economic activity.

The data needed dictates the data collection technique required. In this case, the data required are entirely pre-existing data, compiled nationally (and by the state at the state level).

Longitudinal health data will be traced alongside the level of economic activity (GDP/capita). This will provide information about the general relationship between health and levels of economic activity, addressing the center of the research question.

Next, state health expenditure (net and per capita) will be compared to state debt and levels of economic activity. This comparison seeks to address whether state led expenditures are fiscally sustainable, first in periods of limited economic growth and second in periods of low levels of economic activity. If health expenditures are maintained during periods of low economic growth, stagnation or regression and government debt does not increase, this is indicative of the possibility of pursuing human development with eventually limited economic growth. If health expenditures increase without a corresponding increase in debt at low levels of economic activity, the government's ability to finance health does not necessarily require economic growth.

Finally, health data will be compared with per capita state expenditures on health. This comparison will shed light on whether the amount of per capita health expenditure is related to health outcomes. If per capita health expenditures increase with little effect on health, it will be difficult to know whether this necessitates economic growth or not to maintain. On the one hand, perhaps health costs are rising, and increasing inputs are needed to maintain the same level of health. Alternatively, sharply diminishing returns on health expenditures may have been reached, indicating that economic growth is not necessary, as health expenditures do not need to expand. If per capita health expenditures stabilise and 'good' health is achieved or health indicators rise, this also points in the direction that continued economic growth is not necessary. If per capita expenditures increase and health increases as well, this will indicate that economic growth may be useful in increasing health outcomes.

This study aims to begin a serious discussion about the difference between economic activity and economic growth in bringing about human development, through the case study of health in Cuba and Kerala.

Data limitations

Potential problems for researchers using existing data are enumerated by McTavish and Loether (2006). They include the absence of information relevant to the study, an inadequate sample size, inappropriate categorisation, bias, data preparation errors and out of date data. McTavish and Loether note that the size of the sample is not a concern for nationally compiled statistics such as the ones this study will make use of. The data being

out of date is not a concern either, as the purpose is to do a longitudinal study, and recent data is also available.

Categorisation is problematic particularly for data on government expenditures in health. It is possible that different elements are included in health spending in Kerala and Cuba, however, the larger issue is that non-health spending can directly impact health. Thus determining what is a health expenditure and what is not a health expenditure is problematic. For instance, ration systems in both Kerala and Cuba are not counted as health expenditures despite their direct impact on nutrition and health. As the literature points out, there are numerous non-health expenditures that impact health. These include, but are not limited to, education, safe drinking water, appropriate infrastructure for sanitation and transportation infrastructure. However, for this study, self reported expenditure on health is what will be considered. Even within government health spending in Cuba and Kerala there are issues concerning categorisation. These will be noted as they present themselves in the upcoming chapters.

Missing data is another problem that may be encountered. Data may simply not be available for certain time periods (Newman, 2006). This is a problem that has been encountered in this study. However, despite gaps in the information over certain time periods, sufficient data is available to analyse the historical trends between all four variables in both Cuba and Kerala.

Further problems may arise in the quality of the data. Even data reported by international agencies is gathered by the local government, which may not have the capacity or the motivation to gather good quality data (Rigg, 2006). In Cuba the annual

publications by the government of *Anuario Estadistico de Cuba* will be used to obtain information about government expenditures. Economic information will be drawn from the World Bank and health data will be drawn from the World Health Organisation. As Kerala is not a country, international agencies such as the International Monetary Fund, the World Bank and the World Health Organisation, which report on the required data, do not have longitudinal data on Kerala. This is not necessarily indicative of lesser quality of data as these agencies do not collect national data themselves, but rather depend on national data collection. Data on government expenditures and finances and the economy will be drawn from annual reports published by the Government of Kerala entitled *Economic Review, Kerala.* Secondary sources will be used to assess health in Kerala.

However, the concern remains about the quality of the data available for both Cuba and Kerala. The quality of data collection has improved in both Kerala and Cuba over time. Both have good quality data that is respected and used by academics internationally (Ghai, 2000). However, as Rigg (2006) notes, it is important not to accord an excessively high level of accuracy to nationally gathered data (this is true for most data collection).

One issue in using longitudinal data about financial resources (ie: expenditures, debt, income per capita) is that the annual amounts reported do not account for inflation. This is overcome in the measurement of economic growth and economic activity by using the same currency. In Cuba, this is published for a long time period from the World Bank. In Kerala the data is divided into different sections clearly indicating the year the currency is held constant for. However for government expenditures, it was impossible to

find longitudinal data in a constant currency in either Kerala or Cuba. Thus the increase in government expenditure that is reported in both Kerala and Cuba is inflated, and is less substantial than it initially appears.

Finally, while the political climate in Kerala and Cuba is closely associated with the serious pursuit of health and the ensuing health outcomes, this will not be examined here. The egalitarian nature of their societies contributed to the health status of the population, as investments made in other sectors have positive spinoff effects on health. The governments played large roles in determining the good health of their respective populations. Here, the interest is not on the political conditions that led the governments to focus on health[9]. Nor is our interest in whether these outcomes could have been achieved in other conditions (ie through individual income expansion, rather than government investments).

Thesis statement

The thesis and main finding of this study is that the pursuit of human development is not theoretically at odds with eventually limited economic growth. There is space within Human Development to explore the pursuit of human development at stabilised levels of

[9] It should be noted that the author has weighed John Harriss' argument about the dangers of attempting to depoliticize development in writing. That is, that there is a risk, indeed a trend, to neglect issues of power and politics and make recommendations that do not challenge class relations and power. The subject of this work is inherently political. To emphasis exactly how political it is, I would like to draw on Mencher, who wrote (about Kerala) "What I am basically arguing is that the reason why people are living longer, and why child deaths have declined, relates as much to politicisation of the people as to public policy" (1980, 1782). However, the limited scope of this work does not allow me to fully address power relations and politics and still pursue my main query, and as such it is left to the side. However, it must be emphasised that while this is not the subject of the inquiry, politics, power and class relations have played an important role in the transformations in both Cuba and Kerala.

economic activity. Nonetheless, the foundations of the Human Development approach render it reluctant to engage in such studies.

The empirical evidence gathered from the pursuit of health in Cuba and Kerala leads to several main findings: 1) the pursuit of health is not necessarily linked to economic growth; 2) health can be pursued at low levels of economic activity; 3) the government's fiscal ability to finance health is not closely linked to economic growth; 4) the government can finance health even when its total expenditure ability is restricted without worsening its financial predicament; 5) there are eventually diminishing marginal returns to government investments in health once health has reached a certain level. Together these findings reduce the need for economic growth and make it possible to consider pursuing health at stabilised levels of economic activity.

Structure of the thesis argument

The analysis will begin in the Chapter Two, where the theoretical underpinnings of the human development approach and its relationship with economic growth and with levels of economic activity will be established. It is the nature of the relationship which directs the empirical inquiry. The literature shows that *certain types* of economic activity *can* facilitate the pursuit of *material* aspects of human development through two main avenues: individual income and government expenditures (Ranis & Stewart, 2000). It is agreed that there are diminishing returns to individual income (Haq, 2000; UNDP, 1996) and therefore theoretically it could be levelled off without impeding human development. In Human Development literature, it is generally agreed that economic growth is needed

(in the long run) in order to maintain government expenditures contributing to human development (Sen, 2000; Ranis & Stewart, 2000). However, economic growth does not automatically increase government revenues (UNDP, 1991). Moreover, government expenditures can be re-organised (rather than increased) to achieve superior human development outcomes by focusing more on social expenditures and less on the military for instance (Haq, 2000). Within social spending, the net amount spent is *unrelated* to human development outcomes. It is the quality of the spending which is most important (UNDP, 1991).

As with human development spending in general, the net amount of expenditures on health is unrelated to health outcomes. It is the type of expenditure which is the most important factor (WHO, 2009). In health spending, it is well established that a health system based on preventative and primary healthcare is cheap and highly effective (Alma Ata Declaration 1978; UNICEF & WHO, 1975; Schofield, 1988; Griffin & McKinley, 1994). Moreover, it appears that absolute poverty (rather than wealth) is a determinant of health levels. As such, more equal societies also tend to be healthier societies (Boyle *et al.*, 2006; Subramanian *et al.*, 2002). Good health outcomes are the result of more than just health related expenditures, and reflect a series of factors, including housing, infrastructure and lifestyle choices (smoking, regular physical activity, etc) (WHO, 2008).

Chapter Three is the introductory chapter to the case studies that follow. Health outcomes are not an isolated result of health spending. In order to recognise that health outcomes are affected by social determinants of health, the third chapter will be devoted

to a qualitative analysis of programs and projects undertaken by the government that are likely to have affected health, in the establishment of human development regimes in Kerala and Cuba.

The fourth and fifth chapters tackle the particularities of Cuba and Kerala. In addition to the analysis described in the methodology section earlier, each chapter will present the health systems established in both societies. The final section of each chapter will be devoted to teasing out the lessons offered by Cuba and Kerala in the possibility of pursuing health within limited economic activity.

The final chapter will bring together the threads from the other chapters and state the main findings of the study.

Chapter 2:

Analytical Framework:

Human Development and Economic Growth

It is now evident that the biophysical limits of the earth entail limits to possible economic growth. What does this mean for human development? This study addresses a part of this larger question and explores the extent to which health depends on economic growth, to discover whether health can be pursued in a context of limited economic activity. While many approaches to development may address this question, the Human Development approach is the most logical for the purposes of this thesis. It is an approach that de-emphasises the importance of economic growth throughout the process of development. Certainly it is not the only approach that places humans at the centre of development, nor that places a high priority on health. Its superiority to a basic needs or human rights approach will be identified shortly. The current popularity and influence of the Human Development approach is among the reasons it is used as the framework for this thesis. The annual publication of the Human Development Reports (*inter alia*), which have a significant readership, has made the human development approach highly influential (Kuonqui, 2006). It has been successful in shaping national and international policies (Tharamangalam & Reed, 2009; Gasper, 2002). An analysis of whether human development is possible with limited economic activity is likely to be more influential using a Human Development approach, than using other, potentially equally valid

approaches, due to the current influence of the Human Development framework. Today, the Human Development approach is in a stage of critical self-evaluation, which makes its use even more relevant and timely (Haq, 2000).

However, it is important to justify selecting a Human Development framework when there is growing disillusion with development in general, as demonstrated by the fields of anti and post development. Both anti- and post-development criticise 'development' but in doing so, they treat it as a definable and unified field, which weakens their criticism. Post-development is critical of development for three main reasons. It claims that in development, poverty is incorrectly reduced to a lack of material goods, that development has become synonymous (at least in part) with westernisation and finally that development discourse is used to manage the South (Pieterse, 2000). Not only do these concerns not conflict with the Human Development approach, but it addresses them. The Human Development approach has a holistic understanding of poverty, which extends beyond income poverty. Its notion of agency, of people being empowered to direct their own development, and the fluidity of its definition, where it can mean different things to different people, avoids the danger of equating human development with westernisation or of the North 'managing' the South.

The chapter will begin by outlining the conceptual foundations of the Human Development approach. Next, the complex relationship between economic growth and human development will be explored, focusing on the ability of economic growth to bring about human development. This leads to an exploration of the ability to pursue human development without continual growth. Finally, health will be introduced into

these debates. It is found that while theoretically human development should not be attached to the pursuit of endless economic growth, in practice proponents are reluctant to separate levels of economic activity from economic growth. This blurring of concepts becomes problematic with the recognition that economic growth can jeopardise future human development. Human Development can not support this, yet is missing a concrete delimitation of how economic activity contributes to human flourishing,[10] which would enable it to distinguish between economic growth and economic production, to ascertain whether there exists a level beyond which point growth in no longer useful.

Conceptual foundations

The purpose of the following section is to provide a background understanding of the conditions in which the Human Development approach arose, and its basic principles. This will be followed by a discussion of how the Human Development approach has argued that human development, not economic growth, should be the goal of development.

Amartya Sen and Mahbub ul Haq contributed to founding the Human Development approach in the late 1980s, motivated by the need to place humans at the center of development. The concern for people was not a new idea, but their particular reformulation was. Aristotle (384-322 BC) was concerned with humans, as were classical economists, Adam Smith, John Stuart Mill, and Karl Marx. In the interwar period, economists continued to show concern for humans. Karl Polanyi and John Maynard Keynes exemplify this (Spence, 2009). Despite a 1954 UN report noting that income was

[10] Human development and human flourishing are used interchangeably.

not sufficient to measure standards of living, in post-World War Two development policies, the concern for the human predicament in relation to economic forces was forgotten (Noorbakhsh, 1998). In the 1970s, there were various responses to the strict economic focus of neo-liberalism. The basic needs approach and the human rights approach were two of these. The Human Development approach was formulated after these two, in the very late 1980s.

The basic needs, human rights and Human Development approaches all arose out of a similar concern for people. Predictably, the Human Development approach shares similarities with both of these, but there are also important differences. The Human Development approach adds five elements to the basic needs approach: 1) it has a stronger philosophical foundation; 2) it blurs the distinction between developed and developing countries; 3) it places more importance on freedom and participation; 4) it goes beyond physical conditions to institutional and political elements; 5) it is concerned with the means. It has been pointed out that basic needs can be met in a prison cell - this does not coincide with notions of human flourishing (Deneulin, 2009; Stewart, 2009). Human Development differs from a human rights approach in its emphasis on the importance of opportunity and its greater sensitivity to the means (Deneulin, 2009). These differences become apparent when examining health, an integral element to all three approaches. The human rights approach asserts that health is a basic human right. The basic needs approach concerns itself with primary healthcare. The Human Development approach goes beyond these, aiming for continually improving standards of health, counting morbidity in addition to mortality, valuing mental health, examining the

interaction between different elements of human development (such as freedom or capabilities) and concerning itself with more than the just the final outcomes of good health, including the process that led to the outcome.

The Human Development approach is 'strategic' rather than 'structural'. That is, it is concerned with the possibilities of bringing about human development within the current world system, identifying specific areas of intervention, rather than focusing on the systemic constraints. Human development places the expansion of human flourishing as the end goal of development. It is simultaneously concerned with human flourishing as both an 'end' and the 'means' of development. The Human Development approach does not seek a static definition of what human flourishing consists of, acknowledging that it means different things to different people in different places because it is based on what people value. The idea is to expand people's choices, be they political, economic, social or cultural. Haq writes that theoretically, "choices can be infinite and can change over time" (2000, 14). Conceptually, constructing an inflexible check-list, which attempts to be all-encompassing, for human development is senseless. However, Nussbaum identified ten important capabilities: life; health; bodily integrity; senses, imagination; emotions; practical reason; affiliation; concern for other species; play; and control over one's environment (2000). Ranis *et al.* (2006) identify a competing list of eleven key dimensions of human development: the human development index, mental well-being, empowerment, political freedom, social relations, community well-being, inequalities, work conditions, leisure conditions, economic security, environmental conditions. These

lists can help conceptualise human development, but it should be noted that the elements listed are not universal, nor, as their differences show, are they exhaustive.

There are two sides to human development: the formation of capabilities and the use of these capabilities (Haq, 2000). The formation of capabilities gives people the opportunity to use them as they see fit. For instance, skill development, health and education are part of the formation of capabilities and these can be put to use in various types of employment and leisure. Others have described this duality with the terms functionings (being nourished, having friends, etc) and capabilities (the freedom to enjoy functionings) (Alkire & Deneulin, 2009).

The means of pursuing human development are very important. Haq (2000) writes about four procedural concerns that are important to respect in the pursuit of human flourishing: equity, sustainability, productivity and empowerment. People should have equity in opportunities and in the freedom to pursue valuable lives. The pursuit of human development should be based on the sustainable use of all forms of capital (physical, human, financial and environmental). Goals should be pursued through an efficient use of resources. Finally, people must be empowered – they must be the agents of their own development.

Agency is a central part of the capability approach as articulated by Sen. The Human Development approach seeks to increase human agency, with people acting as agents of their own development. An agent refers to an actor who is able to bring about change. Sen writes that people must be thought of "as being actively involved – given the opportunity – in shaping their own destiny, and not just as passive recipients of the

fruits of cunning development programs"(1999: 53). An expansion of choices inevitably means tradeoffs must be made. People must be the ones to make their own decisions about what they will pursue, based on what they value. The concept of agency is not limited to the individual. It also refers to what can be achieved by communities and groups, beyond a simple addition of its members' agency (Alkire & Deneulin, 2009).

Freedom is another central component of human development. Human development focuses on both 'freedom to' and 'freedom from'. Human development is concerned with not only the unleashing of people from inhibiting forces in their life (extreme poverty, political repression, etc) but also the active pursuit of flourishing (for example: playing the guitar, writing poetry, being part of a community, being loved, etc). Freedom is both intrinsically and instrumentally important. The instrumental approach to freedom is concerned with the end result. A well nourished woman for instance is more able to flourish than a malnourished one. The intrinsic approach to freedom goes beyond end results and values the availability of alternative opportunities. If the malnourished woman is malnourished not because she lacks access to good and nutritional food but rather because she is fasting, exercising her political freedom, this should be viewed in an entirely different light than were she deprived of the means to be well nourished. Intrinsic freedom offers a better indication of human flourishing. The strength in instrumental freedom, is that by focusing on the end state/achievement it is much easier to measure (Sen, 2003a).

Equally fundamental to the Human Development approach, in addition to the above-mentioned components, is a desire to dislodge economic activity from the center

of the stage. Streeton argues that economic growth is "too unspecified, abstract, aggregate and unbound to be a sensible objective of policy" (2003: 78). He continues to argue that the current national accounting system (GDP) is actually a quite poor indicator of 'progress' even in an economic sense, as many things are not counted (externalities such as the toxic contamination of a river do not figure into the calculation) and 'bads' are counted (buying cigarettes and lung cancer care both contribute to the GDP, while they clearly are not indications of progress). Any text introducing the justification for human development starts with a similar line of argumentation, displacing the conceptual link between human development and economic growth.

Deneulin and Shahani (2009) challenge six assumptions leading to the association of economic growth and human development. The first assumption is that economic growth increases people's income and thus increases their quality of life. In fact neither is automatic. Economic growth may not be well distributed, having little to no effect on the majority's real income. Adherents to the human development approach note that empirically countries with similar levels of high economic growth can have remarkably different success in raising the length and quality of life. Likewise, countries that have successfully increased the length and quality of life have varying levels of economic growth. There is no automatic connection between level of per capita income and quality of life. The second assumption is that families with good incomes will not be deprived in other dimensions. Here, empirical evidence is used to show that income poverty does not necessarily overlap with poverty as expressed by lack of education or nutrition. Public services can reach the income poor. The next assumption is that economic growth will

automatically reduce other kinds of poverty. Again, Deneulin and Shahani show how economic growth can coincide with rising levels of malnutrition. The fourth assumption is that economic data is more reliable than data on poverty. Here the authors note that economic data can in fact be weak and that data related to poverty is improving in quality. The fifth assumption is that it is easier to pursue policies that promote economic growth than human flourishing. The authors point out that economic growth can be elusive – it has been pursued with mixed results for decades now. The final assumption is that economic growth can be sustained without a concern for human flourishing. In fact, Deneulin and Shahani assert that economic growth can not be sustained without accompanying gains in human flourishing. Thus they demonstrate that a primary concern for economic growth should be traded for a primary concern with human flourishing.

Economic growth as a means to human development:

After exerting a considerable amount of effort to dislodge economic growth from its paramount position, the Human Development approach turns to economic growth as a primary means of achieving human flourishing. Haq explains, "rejecting an automatic link between income expansion and flourishing human lives is not rejecting growth itself. Economic growth is essential in poor societies for reducing or eliminating poverty. But the quality of this growth is just as important as its quantity" (2000: 15). How then does economic growth contribute to human development? This is a topic that is extensively written about. This section will first explain that the argument is not made particularly coherently. Next, the quality of the growth that can contribute to particular aspects of

human development will be discussed. This is followed by a discussion of the mutually reinforcing nature of the relationship between economic growth and human development. It will be explained that while there is a possibility of pursuing human development at low levels of economic activity, in the long run economic activity is needed for two reasons: individual income and government expenditures, which will be discussed in detail. It will be demonstrated that the Human Development framework has not completely separated itself from neo-classical economics, and as such favours the expansion of income, although it is recognised that eventually there are diminishing returns.

The argument about exactly how economic growth contributes to human development and its importance is not made in a clear, unified manner. Ranis (using Sen as a reference) writes that "income growth clearly strikes as the *main contributor* to directly increasing capabilities of individuals and consequently the human development of a nation, since it encapsulates the economy's command over resources" (2004: 5, emphasis added). However, Sen has written that "economic prosperity is *no more than one of the means* to enriching lives of people. Secondly, even as a means, merely enhancing economic opulence can be quite inefficient in the pursuit of the really valuable ends" (Sen, 2003a, 4, emphasis added). Elsewhere, Sen somewhat reconciles these two ideas: "without ignoring the importance of economic growth, we must look well beyond it" (1999: 14). The seeming contradiction arises from the initial necessity of placing humans at the center of development and then debating how economic growth can play a role. It appears that authors change tone depending on what they are arguing for. When

they are introducing the concept of human development, they will renounce the link to economic growth in a fairly unequivocal manner. However, articles written from a Human Development perspective about the role of economic growth are entirely different, explaining that income and wealth are valuable due to the substantive freedoms that they allow humans to achieve (Sen, 1999).

This second line of argumentation begins on a cautionary note: while economic growth *can* contribute to economic development this does not occur *automatically.* Economic growth is only one of the many tributaries to human development. Other equally important ones are human resource development, human rights and participation, peace and security, and sustainability (Streeton, 2003). Recalling the key dimensions identified by Nussbaum (2000) and Ranis *et al.* (2006), it is evident that economic growth is completely unrelated to many of these. Economic growth can only contribute to the material dimension of human development. Material wellbeing is however, an integral aspect of human flourishing. Being adequately clothed and sheltered for example is always important. The growth of consumption in goods and services becomes associated with human flourishing. When individuals' incomes are expanded, it is assumed that their choice and opportunities are also expanded. As Jolly observes, Human Development and neoliberalism have common roots in the liberal economic tradition, which emphasizes the fundamental importance of choices and the value of well-functioning markets to enable individuals to exercise these choices (2003).[11] A country's total command over resources, or their gross domestic product, provides the fund for material human

[11] It can be noted that the link to a market economy takes place through the concept of endlessly expanding opportunities, which fits quite well into the assumption of neo-classical economics that states that humans have insatiable desires.

development achievements. The allocation of the resources can result in differing human development achievements (Ranis & Stewart, 2000). Economic growth expands the total command over resources and thus can be thought of as a necessary, but not sufficient, condition for human development.

The quality of the growth and the strength of the mechanism that translates economic growth into human flourishing determine how closely the two move together (Spence, 2009). Only a particular type of growth favours human development. The absolute amount of GDP is of lesser importance than its composition, the uses to which it is put, its distribution, the amount of effort exerted to produce it and the conditions under which it was produced (Streeton, 2003). Academics caution that economic growth is never desirable in and of itself and that it can be jobless, ruthless, voiceless, rootless and futureless and thus that the quality and distribution of the growth are more important than the quantity. Desirable growth is one that creates employment, where benefits accrue to everyone (not only the rich), that is accompanied by an extension of democracy and empowerment (the choice is not between dictatorship and growth), where cultural identity is preserved (people participate in choosing the tradeoffs between efficiency and tradition) and finally where resources are maintained for future generations (UNDP, 1996). In short, the growth must alleviate inequality. These conditions are generally agreed upon and must all be met (Spence, 2009; Haq, 2000; Haq, 1994).

Haq (2000) writes that there are three ways to create desirable links between economic growth and human development. First, investments in education, health and skills by the government are important. This is important not only in its immediate

human development effects, but in the expansion of possibilities that it offers to the healthier and more skilled people- finding employment should be facilitated and thus they would share in the benefits of economic growth. Second, the equitable distribution of income, including the equitable distribution of assets, is important. Finally, Haq underlines the importance of empowering people, particularly women.

The relationship between human development and economic growth does not run in only one direction; they are mutually reinforcing. A vast amount of literature and empirical studies demonstrate the contributions of human capital (and by extension human capability[12]) to economic growth (Savvidas & Stengos, 2009; Ranis & Stewart, 2004; Ranis, 2004; UNDP, 1996; Griffin & McKinley, 1994). This relationship is not of intrinsic importance to human development (or to this chapter). Its significance lies in the stimulating effects that economic growth can have on human development. Countries can find themselves on an upward spiral where gains in human development lead to economic growth, which in turn contributes to more human development. This relationship may have the opposite effect of course, where low human development does not contribute to economic growth and low economic growth does not stimulate the advance of human development. Both high human development without economic

[12] While in general the Human Development approach seeks to distinguish human capabilities from human capital, the argument about how human development leads to economic growth is based on human capital. Human capital refers to the agency of humans in increased production (Sen, 2003 B). Along with natural capital and physical capital, it makes up the total stock of capital, from which economic benefits are derived (Griffin & McKinley, 1994). Human capability refers to the ability of humans to live lives that they value and to the expansion of their choices. Human capability is concerned with the intrinsic value of increases in potential to flourish, not merely the relation to production (Sen, 2003 B). Moreover, human capability is interested in *all* humans, not just those who are members or who will be members of the workforce. It concerns itself (*inter alia*) with the elderly, the infirm, children, women and indigenous peoples, which human capital is not necessarily interested in. Increases in human capabilities often translate to increases in human capital and vice versa.

growth and high economic growth without human development are unlikely to persist in the long term. The 'lop-sided' development may occur for a relatively short period of time, but it will either adjust to the high levels of human development and economic growth or it will fall to low levels of human development and economic growth (Ranis & Stewart, 2004; *ibid,* 2000)[13]. The presence of a mutually reinforcing relationship could leave policy makers room for speculation about which to concentrate on first. As human development is the end goal, if the focus must be on one or the other, it should be on human development. Moreover, Ranis & Stewart (2004) find that empirically, human development comes first.

The first Human Development Report, in 1990, advanced the idea that human development could be pursued at all income levels: "people do not need excessive financial resources to ensure a decent living" (1990: 12). In addition to noting that some elements of human development are completely unrelated to levels of economic activity, it asserts that even the provision of basic physical capabilities such as education and health are attainable for poor countries if they reorient their budgets away from debt repayments and military expenditures to investments in people. This initial distance with economic growth is slowly eroding with each successive Human Development Report. If the goal of human development is more than the poverty eradication, then, it is argued, economic growth is important (Kaul, 2003). While the 2003 HDR has a nuanced promotion of economic growth, it still provides "a clear message: economic growth is

[13] Ranis & Stewart (2000) conducted a global study made up of highest ranking regional human development countries. They found that only Costa Rica remained in a position of 'lop-sided' development over the 35 year period, maintaining high human development without high economic growth.

essential for reducing poverty [...] failed economic growth lies behind the faltering HDI" (UNDP, 2003: 40).

Today, it is generally accepted that while in the short term, at any income level human development can be pursued, in the long run, economic growth is necessary to sustain and advance human development achievements (UNDP, 1996; UNDP, 2003). In this mindset, the 1996 HDR identifies three groups of countries that need faster economic growth – which in essence is the entire global South: the low human development countries (most of Africa), the formerly socialist countries that are in transition and the middle range of developing countries, in which most countries in Latin America, the Middle East, South Asia and South East Asia are included (the only countries that are not included in the groupings are the OECD countries and the newly industrialized countries). Economic growth is advocated to support human development. It is recommended that policy focus on "strengthening the links between economic growth and human development" (p.285).

Achievements in human development alone are not always looked upon in a favourable light. Kerala for instance has come under significant criticism, not for its failure to achieve human development *per se*, but for the lack of accompanying economic growth (Tharamangalam, 2004). Amartya Sen, among others, has refused to label Kerala a model of development citing *insufficient* economic growth (Parayil, 2000)[14]. The idea

[14] The debate around Kerala's status as a model is twofold. First, the government's ability to continue to finance human development is questioned. Second, it is believed that economic growth would help to increase human development by providing employment opportunities and increasing individual income (thus expanding choice and opportunity) (Thomas, 2006). There is also a debate surrounding the replicability of human development achieved in Kerala (Tharamangalam, 2006). However, this is of lesser importance to our discussion.

that in the long term economic growth is not only desirable, but necessary to maintain human development is also made in relation to specific aspects of material human development, such as health (Bloom & Canning, 2003). Gupta & Mitra (2004) find that poor growth reduces government health expenditures, which has a negative effect on the population's health. This line of argumentation makes clear that any study examining the link between economic growth and human development must be a longitudinal one, to determine if human development is lasting.

Ranis & Stewart (2000) examine the link between economic growth and material human development and conclude that growth in GDP contributes mostly to human development through household and government expenditure. They find that both types of expenditure generally increase with economic growth[15].

Their study reiterates that the importance of economic growth to human development is twofold. While certain parts of human development can be met by the state or at low income levels, increased income for households enables them to continue the pursuit of human flourishing, by expanding their choices. Secondly, it may be fiscally unsustainable in the long term for a state to pursue human development without economic growth (Ranis & Stewart, 2007; Haq, 2000; UNDP, 2003; UNDP, 1996).

This duel importance gives rise to debate about whether economic activity contributes equally to government and individual expenditures on human development. Are the human development outcomes different and does this imply a different need for economic growth? The Human Development approach does not take a decisive stand as

[15] This finding is in direct contradiction with the founding principles of human development: economic growth *does not necessarily* move in the same direction as human development (Spence, 2009).

to which of these contributes the most to human development. This thesis will not enter the debate about the relative benefits and tradeoffs between government and individual expenditures in human development and what the optimal relationship is. It is concerned with the resources needed in working towards human development, rather than who spends them or the type of political system that is best suited to do so[16]. The potential role of both individual income and government expenditures will be addressed in turn below.

The attempt to measure human development by the Human Development Index (HDI), sheds light on the perceived use of expanded income (a goal of economic growth) to the Human Development approach.[17] The HDI is made up of three key components to human flourishing: longevity, knowledge and "command over resources to ensure a decent standard of living" (in Anand & Sen, 2000a, 86). The exact calculations and the variables that are used as inputs into the calculations resulting in the HDI have evolved over time, reflecting changes in thought and quality of data available. Longevity and knowledge are indicators of the 'end' and 'means' of human development, by intrinsically contributing to human flourishing and also by the expansion of capabilities. Meanwhile, 'command over resources' relates only to the 'means'. Some have

[16] It is clear that in the case of health in both Cuba and Kerala, the government plays an active role in ensuring all members of society are entitled to health. However, the author merely seeks to explore the cost of this pursuit of health. Different political systems have been highly successful in pursuing human development. Cuba, Chile, Costa Rica and South Korea are but some examples of this ability in differing political situations (Jolly, 2000; Ghai, 2000).

[17] It is understood that the HDI is at best a rough indicator of human development, as it is impossible for it to accurately reflect all aspects of human flourishing (Haq, 2000; Anand & Sen, 2000a). Criticism of the HDI can be categorised into three broad groups: 1) Using a single index to measure human development can not accurately reflect human development. 2) Problems with the data. 3) Technical properties, for example, the rate of diminishing return (Noorbakhsh, 1998).

questioned the validity of including a variable that is not a direct indicator of human flourishing.

Proponents who believe that 'command over resources' should be part of the HDI explain that 'command over resources' captures a myriad of goods and services that contribute to human development (Haq, 2000). Theoretically 'command over resources' is not restricted to income, but income is the input used in the calculation for the HDI (Anand & Sen, 2000a). As explained above, the Human Development approach perceives income as a useful tool in increasing capabilities of individuals, through its potential to expand choice and opportunity and its use in the pursuit of material aspects of human development.

In the HDI, income per capita is adjusted for purchasing power parity. Two additional adjustments are made in the calculation. The first is to reflect the diminishing marginal returns of income. That is, an additional dollar has significantly different impacts on the pursuit of human flourishing at different income levels. One more dollar makes little difference to an income of $20,000; however the same dollar has a greater value for a $200 income. The HDI has a cut off point of about $ 5,000, after which increased income is accounted for with sharply diminishing returns. The exact level of the cut off is slightly controversial, but it is the idea that is important. Haq explains that "the premise is that people do not need an infinite amount of income for a decent life" (2000: 45). The diminishing returns of GDP to human development have been demonstrated empirically (Cahill, 2002). The second adjustment accounts for the lack of information about distribution of the income in income per capita statistics, which is

important if it is to be useful in indicating 'command over resources' for the general population. To measure distribution, the Gini coefficient is used in the calculation of 'command over resources'. In using an adjusted input of income per capita, the human development index emphasizes sufficiency and distribution.

The inclusion of 'command over resources' in the HDI entails certain biases towards *individual*, *monetary* transactions, although this may be a poor indication of opportunity (for human development). Scenarios can easily be imagined where the use of income to represent command over resources is not particularly useful. Two families may have the same cash income. However, one is located in a rural setting and has the opportunity to raise animals and grow crops. This family has a greater propensity towards human flourishing, and indeed has more opportunities than one in a city, which lives entirely in a monetized economy and whose income directly limits their opportunities.

Where the Human Development approach theoretically should not distinguish between a service provided by the state to all its citizens at no cost, and all citizens being able to purchase goods, the inclusion of command over resources makes this distinction. Another scenario can be imagined where one family has a low monetary income, however benefits from subsidised housing and food, in addition to free education and health care. The second family in another country has a slightly higher income and health and education are also free. If food and housing are not subsidized, their purchasing power (and opportunities) may actually be inferior to the first family. The HDI is unable

to reflect this difference in opportunity and will misleadingly rank the family in the second scenario above the first family.

The use of income in the measurement of human development is indicative of a tendency in the approach to favour the capacity to buy something over having access to it. Human Development literature devotes a lot of energy to analysing the benefits of expanded income. To be fair, theoretically Human Development is interested in entitlements, defined by Sen as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces" (1984: 497). However, this concept is given significantly less space when the uses of economic growth are discussed. There is a tension in the Human Development approach between entitlements and the capability approach. The capability approach is the dominant one, and its language of expanding individual choice lends itself to neo-liberal, consumerist societies (Gasper, 2007; Cameron, 2000). In fact, Sen invokes neo classical economic theorems and has refined the individualistic frame of social choice in his elaborations on the capability approach (Gasper, 2008). This dominance is exemplified by the following passage from the very first page of the 1998 HDR, "we must aim at extending and improving consumer choices too, but in ways that promote human life" (UNDP, 1998: 1). The centrality of the importance of individual income expansion in explaining the use of economic growth lends itself to a bias for a more capitalist society over a socialist one.[18] The argument made to support this is that

[18] Some maintain that human development can be practiced in a socialist or capitalist system: the concept of freedom appealing to capitalism and the concept of equality appealing to socialism (Tharamangalam & Reed, 2009). The author of this article has two criticisms of such a statement. While both Human Development and capitalism embrace concepts of freedom, it would be a mistake to think that their notions

individuals can chose what contributes to their own development – for a fisherperson being able to buy a new net or pay for boat repairs may contribute more to his/her wellbeing than subsidized food.

The Human Development approach also advocates a significant role for the government, particularly in advancing the health and education of its population, through expenditures (Haq, 2000). Economic growth can increase government revenues, but does not do so automatically. The link between economic growth and taxation is complex. For instance, Malaysia and Morocco collected *less* tax in the 1980s, despite growing economies (UNDP, 1991). Ranis and Stewart (2000) write that the strength of the link between economic growth and increased government revenue and human development expenditures depends on 1) the tax capacity of the system; 2) the strength of the demand for military and other non-human development expenditures; and 3) the government's responsiveness to the needs of lower income groups. They also note that decentralization tends to increase the collection of taxes and as local governments are more responsive to the poor's needs, it also results in more human development expenditures.

It is noted that the net quantity of government expenditures is *unrelated* to human development achievements (UNDP, 1991). Ranis and Stewart (2000) find that there are three important ratios to be considered when linking government expenditures and human development: the proportion of GDP spent by various levels of government, the proportion of government expenditure devoted to human development investments

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of freedom are the same. In fact they are quite distinct. Despite this, however, the author feels that the accounting of the HDI favours a capitalist society. Theoretically, socialism does not pose a barrier to the pursuit of human flourishing. However, in the emphasis placed on personal income, the merits of a socialist system are discredited.

(health, education, employment, social security, etc) and the proportion of spending in human development that is allocated to high priorities (there is no absolute 'high priority' – they vary). The 1991 HDR suggests that good human development can be achieved when government expenditures account for approximately 25 % of the GDP, of which 40% (or more) is allotted to social spending and more than 50% of this is spent on social priorities (UNDP, 1991). This breakdown continues to be the standard recommendation (Haq, 2000). The expenditure ratios are not end goals, but can be indicative of human development outcomes.

The importance of prioritised spending even within social spending can not be overemphasised. Some countries spend 80-90% of their health budget on hospitals, which only reach a small fraction of the population, thus having negligible returns on human development (UNDP, 1991). Haq argues that in most developing countries there is no need to increase government expenditures but rather a re-organising of the expenditures is needed in order for them to contribute more to human development (2000). In fact, many developing countries have reduced the size of their net government spending, while increasing or maintaining their human development spending (UNDP, 1991).

Human development and levels of economic activity

Up to this point the discussion around human development and economic activity has been centered uniquely on growth and on ideas relating to what that growth should resemble. Indeed, this is the focus of Human Development literature. While Human Development writers are quick to highlight the success of countries that pursue human

development with relatively low incomes (in their good health outcomes for instance), they have not expanded on the idea and flushed out the possibilities for human development at a steady level of per capita income. If material wellbeing is only one aspect of human development, which certain types of economic growth offer the means to achieving at diminishing returns, why is sufficiency of economic growth not explored? Alkire notes that "the idea that the fundamental aim of *economic activity* is to support human development goes back at least to Aristotle" (2010: 38, emphasis added). Yet, Alkire, like other Human Development scholars, fails to consider the implications of economic activity for human development, and turns to a lengthy discussion of economic growth.

Endless economic expansion is not inexorably embedded in the theoretical conception of human development; however, Human Development scholars are reluctant to relinquish economic growth (as exemplified earlier by Sen). The Human Development framework comes out of the economic tradition (Alkire, 2010). Many analysts have noted that it has failed to separate itself from the latter (see Gasper, 2008 *inter alia*).[19] It is this continued overlap with neoclassical economics which is an obstacle to the theoretical acceptance that the pursuit of human development can coincide with certain levels of per capita income levels rather than endless growth.[20] It should be recalled at this point that

[19] Korten (1994) for instance warns that Human Development slides into liberal economic presumptions as a result of not consciously delimiting a political and economic theory, merely offering a more social face to neoclassical economic theory. Kuonqui draws attention to the failure of Human Development up to this point to "supplant the intellectual primacy of neoclassical economics" (2006: 34). Similarly, Cameron writes that neoliberalism has a 'stranglehold' on Human Development (2000, 1044).

[20] Evidently, there could be no set level of adequate income, due to variations in needs, values and costs across space and time. However, conceptually, there could be a limit to useful income, which contributes to human flourishing. Achieving certain levels of economic activity is not the goal of human development – it is only one of the means to human development.

the Human Development approach is a strategic one. The implication is that it seeks to pursue human development within the current system. Exploring, even theoretically, possibilities of human development in a no-growth context, implies changes to the system. This could be a reason the idea is not explored.

This section is forced to take a more speculative approach in the process of examining whether economic growth or certain levels of economic activity are needed to pursue human development. Economic growth has the potential to contribute to human development, as noted in the previous section, principally through two arteries: individual (household) income and government expenditures. For each, the benefits of unlimited economic growth will be examined. We will draw briefly on authors outside the Human Development approach to consider the validity of their propositions. Finally, it will be proposed that the acceptance that economic growth can have negative environmental consequences, which in turn impede human development, suggests that economic growth and activity should be considered separately.

Expanding human choices and opportunities is an important component of human development, to which growth can contribute to through individual income expansion. However, the endless expansion of choice is not the goal – expanding human flourishing and the quality of life is the goal. Expansion of some choices can even detract from human development, and at the very least cease to contribute to human development. An individual faced with 50 different types of toothpaste is not necessarily better off than the one faced with only five choices – in fact, it may be easier for the latter to decide which suits his/her needs most (Alkire & Deneulin, 2009). Gasper explains that the expansion

of choice can even be harmful, if bad choices are made. He points to the choice to become HIV positive, to become addicted to television or to pornography as examples. One may add the choice to destroy ecosystems. Moreover, Gasper notes that choice is actually delimited by the system – something Human Development neglects to address (2002). O'Laughlin and Pouw (2004) would agree, "in maintaining the microeconomist's focus on individual choice, approaches inspired by Sen's work provide a very narrow vision of poverty as a process. They do not address underlying political and economic relations of [power,] inequality [and dependency] that constrain individual choice and link individual experience to macro political and economic processes." (in Gasper, 2008: 248). The reader can note that expansion of choice is neither as simple nor beneficial as the Human Development approach suggests.

Moreover, the central concept of 'valuing' could also reduce the importance of increased individual income. Capabilities are prioritised based on what *people have reason to value* (i.e. see UNDP, 1998: 40). Imperfect information can influence what people value. Indeed, people may value activities that are objectively detrimental to their development (such as smoking, or alternatively the destruction of ecosystems) (Gasper, 2002). Thus, the reliance on individual valuation is somewhat problematic and deserves a more systematic critical review. Putting objections aside, as there is no static definition of what contributes to human development, a change in values in a society could reduce the importance of increased income. Were material accumulation valued less as a contributor to human flourishing than the maintenance of healthy eco-systems for instance, stabilising economic activity could be desirable.

Furthermore, it has been noted that benefits derived from income expansion occur only up to a certain level of income, after which increases in income contribute little to the pursuit of human development. If the technique in calculating the HDI is recalled, there are diminishing returns to the benefits from increased income. Embedded in the HDI is the idea of sufficiency in relation to income. The HDI of course does not represent Human Development as a whole. However, this concept of sufficiency is raised elsewhere. Ranis & Stewart (2007) find that income in high income countries is less useful in determining human flourishing than in low income countries. Similarly, the 1996 Human Development Report adamantly encourages the pursuit of economic growth in the global South, but recommends that the North focus more on distribution and employment. Enshrouded is the implication that after a certain point, material consumption ceases to add to human flourishing.

The concept of entitlements further reduces the importance of individual income, valuing other ways that enable households to pursue their flourishing. Thus, the reasons given for use of economic growth, as a means to human development through increasing individual income, do not stand in the way of a conceptual pursuit of human development at plateaued levels of economic activity. Despite this, Sen (1999) writes that it is clearly better to have longevity and a high income, rather than just longevity. He fails to explain why. What is a 'high' income and is it adequate? Does this income need to perpetually increase? Are higher and higher incomes *always* better, *ceteris paribus*?

Let us turn to the second way in which economic growth may contribute to human development: through government expenditures. Here the issue is whether governments

are able to continue to finance human development expenditures. It has been demonstrated that it is the *quality* of government expenditures rather than the quantity, which has the largest effect on human development. An extrapolation of the argument presented earlier about developing countries needing to re-organise their budgets to advance human development, is that economic growth is not needed to advance human development, as government revenues do not need to be expanded.

Once countries have directed their spending towards human development, is economic growth necessary to maintain it? There are two sides to maintaining a balanced budget, revenues and expenditures. As noted earlier, economic growth does not necessarily increase revenues. Similarly, it is possible to increase revenues without economic growth, through a more effective tax system (UNDP, 1991). At any given level of economic activity, the government will have revenues and as long as its expenditures do not surpass these, it maintains a balanced budget. The question becomes whether continually increasing government expenditures contribute to human development (as this would require increased revenues, perhaps justifying a need for economic growth). There is a lack of information on this subject.

There are several regions that have carried out government-led human development with low levels of economic activity. Costa Rica, Sri Lanka, Kerala and Cuba are cases that have reached relatively high levels of social indicators, through targeted government expenditures in human development, despite relatively low levels of economic activity. Their examples beg two questions: have they been able to maintain their human development improvements?; what happened to government expenditure?

These will be discussed briefly. In Costa Rica, the government accumulated a massive debt and the country went through a period of economic crisis in the 1980s, sharply reducing the resources available to the state. The government's social spending increased from the 1950s to the 1980s, decreased in the 1980s due to an economic crisis, but by 1986 had surpassed the prior level. In the 1990s, per capita spending decreased due to a change in policy. Despite this, social indicators increased, albeit at a slower pace (Garnier *et al.,* 2000). In Sri Lanka, gross indicators of human development improve despite the outbreak of a long lasting civil war and cutbacks in government expenditures during a period of structural adjustment (Alailama & Saneratne, 2000). Kerala faced a serious fiscal crisis in the late 1980s and early 1990s, which also resulted in a tightening of the government's expenditures (Varatharajan, 2004). Gross indicators of human development in health and education have not fallen, although individual expenditure on human development has increased (Tharamangalam, 2006). In Cuba, human development has been able to weather a massive economic crisis (triggered by the collapse of the Soviet Union) in the early 1990s, which reduced the government's expenditure ability. There were some temporary setbacks in health, but given the high budgetary priority given to health and education, social indicators bounced back and have increased (Sainsbury, 2005). There are two observations to be made. First, the states in each case encountered fiscal difficulties. Answering whether this was the result of the human development expenditures in the first place requires more research[21]. Second, in each case, human development was able to continue despite restricted financial capabilities of the state, which resulted in some cases in reduced social expenditure. This suggests that

[21] This question will be examined in greater detail for Cuba and Kerala in subsequent chapters.

government expenditure can be limited without jeopardizing the pursuit of human development[22].

Can per capita government expenditures be levelled off at a certain point with no negative consequences for human development? Were the population of a country to have stabilised, would this also mean the level of economic activity could cease to increase? These are questions that have not been addressed thoroughly within the human development approach, but which are starting to be addressed from outside the approach. Victor & Rosenbluth (2007) for instance, conduct simulations of no growth for the Canadian economy and they find that when combined with no population growth, the government is fiscally able to continue financing its expenditures.

In per capita terms, it is easy to accept that there could theoretically be 'enough' of both individual income and government expenditure. This raises the question of population. A few observations should be made. There is substantial data recognising a demographic transition, which occurs with human development, where population growth slows substantially, due to decreased fertility rates (Todaro & Smith, 2006). However, the accompanying aging of a population resulting from decreased fertility rates is a cause for concern, as there can be a smaller base of workers to support the retired workers (Bose, 2006). Discussing curbing population growth has become a very sensitive issue because the overwhelming majority of it takes place in the South, which in turn feels targeted by such discussions. This is not the objective of its mention in this chapter. The point is merely to observe that for total economic activity to level off, it will

[22] The author recognises that there are many examples of low economic activity or economic regression that coincide with low or falling levels of human development. However, this does not diminish the importance or relevance of the highlighted cases.

be necessary for population sizes to stabilise as well, otherwise levelling off economic activity would simply result in decreasing per capita incomes, which would probably not help to advance human development. The fear of economic hardship accompanying population stabilisation, and the sensitivity of the topic, may be another reason that the Human Development framework avoids discussing stabilised levels of economic activity.

There is discussion outside of the field of Human Development that human flourishing can be pursued at fixed levels of economic activity. John Stewart Mill and Herman Daly are two economists who have explored this relationship. Mill writes of societies reaching a satisfactory level of economic activity and levelling off, in what he calls a stationary state. This would allow for potentially even greater human development, giving people time and energy to devote to spirituality or the pursuit of the arts (1965). Daly builds on this concept and formulates a steady state economy. He distinguishes between economic growth and development, (vaguely) defining economic growth as a quantitative increase, and development as a qualitative improvement (1991; 1996). Both acknowledge diminishing returns of increased individual income beyond a certain point. Neither Daly nor Mill specifically addresses government expenditures on human development. Nor does either provide theoretical explanations of how human development can be achieved at steady levels of economic activity. However, central to both of their claims for the continued pursuit of human development in a context of stable levels of economic activity is a stabilised population. It should be noted that Daly and Mill have weak understandings of human development compared to authors within the

approach[23]. Both authors confuse happiness, satisfaction and human development, which as Sen (1999) explains, are separate concepts. A person may be happy simply because they have accepted their fate, this does not mean that improvements to their life can not be made, nor that they do not desire them.

Despite their weak understanding of human development, Mill and Daly raise an issue that has been neglected and needs to be addressed squarely by Human Development: happiness. Happiness literature is growing, and many studies demonstrate that expanded consumption brings individuals no closer to happiness (Schokkaert, 2007; Booth, 2004; Myers, 2003; Etzioni, 2003; Schor, 2003). Is the expansion of choice related to elusive happiness? (Gasper, 2002). This is an important question, for unhappiness and dissatisfaction are certainly not components of human development! The government of Bhutan articulately argues that the pursuit of human development should coincide with increased happiness (2005)[24]. Sen's explanation of the weaknesses of happiness remain valid; however, it could be useful to count happiness, certainly at higher levels of income, where material aspects of human development have been accounted for. This would further encourage separating the benefits derived from levels of economic activity from those generated through continued economic growth.

In addition to the theoretical interest in re-examining the role of economic growth in the pursuit of human development, the environmental consequences of economic

[23] It should be noted that Mill was writing significantly before the emergence of the Human Development framework and so a weak grasp of issues that have been hammered out since his writing is not surprising.
[24] It notes the differences between the differences in its use of the Gross National Happiness index and the UNDP's HDI, but also notes how they overlap, and the importance of happiness. Scholars from Bhutan argue that the difficulties in quantifying happiness do not annul the potential use in aiming for it (Thinley, 2004).

growth further point in this direction. It is acknowledged by those within the Human Development approach that even economic growth, which is good in terms of its immediate human development contributions (to employment, or otherwise), can be undesirable and 'futureless' as it destroys natural capital, making long term human development impossible (UNDP, 1996). It has been noted by scholars in the Human Development approach (as well as environmentalists) that the level of material consumption of the North is running down the natural resource base and the carrying capacity of the earth. The material consumption in the North can not be generalised to the world (Haq, 2000). Economic growth is not desirable if it is growing into a society similar to the North as this limits future human development.

Sustainability is in fact a key component of human development, introducing intergenerational justice. Human development is about the enlargement of capabilities and sustainable development is concerned with the permanent enlargement of capabilities (Griffin & McKinley, 1994; Deneulin, 2009). Those in the Human Development field are quick to establish that the two do not conflict and in fact must be linked. However, the two bodies of literature have remained largely separate (Neumayer, 2010). Within Human Development literature the conceptualisation of what sustainable development is, differs.[25] To some, it means sustaining the total stock of capital (not necessarily natural capital) (Anand & Sen, 2000b; Griffin & McKinley, 1994), to others, the preservation of natural capital is important as a means to sustaining human life (Haq, 2000). The 1998 Human Development Report states the importance of reducing the natural resource

[25] In fact, many authors and institutions fluctuate between principles of strong and weak sustainability (see Neumayer, 2010 for details).

component of production and consumption. The underlying idea is that there is a need to maintain a certain resource base. It also writes that industrialised countries need to go beyond delinking natural resource use and production, and must embrace dematerialisation. They need to decrease their use of natural resources as sources and sinks (UNDP, 1998). This entails limits, at the very least, to the type of economic growth pursued.

Haq (2000) argues that growth itself should not be questioned, but that for long term human development, it must be different. This is in line with the human development's approach to economic growth over the past two decades: a certain type of growth is a necessary, but not sufficient condition for the pursuit of human flourishing. Indeed, this is restated most recently by Alkire (2010). To the extent that economic growth is linked to the use of natural resources as sources and sinks, human development should theoretically embrace the concept of limits to economic growth being conducive to human flourishing. It was demonstrated in the first chapter that in fact, growth is closely tied to the use of natural resources and thus is limited. As this becomes increasingly obvious, the Human Development approach will find itself forced to make distinctions between the benefits derived from economic growth and from levels of economic activity. The first steps towards this transition are being hinted at: Alkire visually places all of the components and facets of human development within a shared planet, mimicking diagrams made by ecologists (described in the first chapter). She also writes "Economics is poised to change. Within a decade it will be different. [...] [Human development] can contribute to the current reformulation of economics" (2010: 67).

Health, economic growth, individual income and government expenditures

The relationships that have been discussed between human development and levels of economic activity and economic growth also play out when examining particular aspects of material human development, such as health. In this section, the questions raised throughout the chapter will be applied to health. There are a wide range of factors that affect health that in some societies are mitigated by the government (to varying degrees) and in others left to individuals (and markets): working conditions, housing, nutrition, clean water, etc. (WHO, 2008). While it may strike the reader as an obvious assertion, it is important to emphasise that health is a function of a multitude of inputs. Access to curative health is only one of these. The World Health Organisation explains that social determinants of health are mostly responsible for health inequities between countries and defines them as "the conditions in which people are born, grow, live, work and age, including the health system" (2010b).

Recognising the importance of social determinants of health makes the task of identifying a separate relationship for health and economic growth more complex. We will begin by reviewing studies that have attempted to do so. Then, using the current knowledge of the contributions of both individual and government expenditures, we will reflect on the possibility of pursuing health within limited levels of economic activity. Both are widely agreed to have an important role in generating good health outcomes (Hopkins, 2006). The role of the government is justified in part by the public good nature of some elements of healthcare, such as the eradication of infectious disease. Other

economic justifications include frequent market failures in providing optimal health, due to uncertainty (WHO, 2008; World Bank, 2004). Individuals play an important role in deciding health outcomes as well: one can think of the decision to smoke, or to engage in physical exercise.

It is important to recall that in the very basis of the Human Development approach, authors refute an automatic connection between economic growth (or levels of economic activity) and human development, and often employ health statistics to prove their point (Deneulin & Shahani, 2009). This contrast has been well demonstrated in various Human Development Reports. It is in this spirit that Sen writes that societies do not need to be wealthy to be healthy (1999). The same conclusion is drawn by the World Health Organisation (2008). Kerala and Cuba are textbook examples of this possibility.

Despite this observation, the Human Development approach does not discard the use of economic activity in relation to health. They admit a tendency for richer societies to be healthier, thus allowing for a broad relationship between economic development and health (Sen, 2001; Anand & Ravallion, 1993). Haddad *et al.* demonstrate that income growth in low-income countries is associated with a reduction in malnutrition rates (2003). Likewise, in a study of 42 developing countries conducted by Boyle *et al.* it is found that economic development is an important factor in explaining the health differences (2006). In a cross sectional study of 65 countries, the World Bank found that child mortality falls faster where per capita income is growing rapidly (1993). A decade later the Bank demonstrated, again in a cross sectional study, that higher levels of GDP are strongly correlated with lower levels of infant mortality across countries (World

Bank, 2004). It can be observed that this conclusion about the relationship between economic growth and health relies on cross sectional studies. Indeed, longitudinal studies paint a more varied picture. Ghai rejects any connection between rates of growth and health, pointing to three decades of low growth and good health in Cuba and to poor human development during the higher growth rates of the 1960s in Kerala (2000).[26]

A central weakness with cross-sectional studies is that they do not demonstrate causality. Cross sectional studies leave the nature of the relationship to speculation: possibly the economic growth led to the health, the health led to the economic growth, exogenous variables are at play, or some combination of these factors offers the real explanation. Human development scholars will often opt for the last option – the relationship between health and economic activity is a mutually reinforcing one which is affected by exogenous variables.

While the majority of the literature points to a positive relationship between economic growth and health, this relationship is limited. There is a significant body of literature that shows that while at low income levels of economic production, growth has the potential to increase health, at high levels of economic production, this relationship disintegrates and even reverses (Egger, 2009; Granados & Ionides, 2008). These observations were all in Northern countries, and trace the weakening relationship to the mid twentieth century. The studies do not claim to have found a universal level of

[26] Ghai does note however that health in Cuba suffered negative consequences from the massive recession in the 1990s. Moreover, he admits that the observation in Kerala could be due to a time lag, where the benefits (and harm) of different economic activity only come into effect later. This will be examined in greater detail in later chapters. Both statements show that the relationship between economic activity and health is not simple. Yet, Ghai does not change his assertion that they are unrelated. Such an assertion misses nuances, just as the opposite assertion that economic activity automatically leads to health does. It appears (to this author at any rate) that economic activity *can* have an impact on health.

diminishing returns to economic growth, but note its existence. Others note that at any level of production, economic growth has the potential to have negative effects on health (Szreter, 1997).

In a frequently cited study, Anand & Ravallion (1993) found that the positive correlation between life expectancy and affluence across countries disappears when public health spending and poverty reduction are controlled for. Haddad *et al.* make a similar observation, noting the less than perfect correlation between national income and health is due to public action (2003). Before scrutinising the ways in which governments can contribute to health, the possible benefits derived from individual incomes will be examined.

In relation to the possible health benefits derived from increases in personal income, the evidence is clear. The World Health Organisation (WHO), notes that in countries across all income levels, health and illness follow a social gradient: the lower the socioeconomic position of the individual, the worse his/her health (2008). This is a self perpetuating relationship, where poor people are unable to invest in good health (nutrition, clean water, care during illness, etc) and their poor health puts them at a disadvantage when attempting to increase their income (decreased productivity when working, absenteeism due to illness, etc) (World Bank, 2004; Gupta & Mitra, 2004). When individuals' incomes increase, their health does as well, as a result of their increased ability to purchase goods and services related to health (Spiegel & Yassi, 2004). However, the relationship has limits. Pritchett & Summers find that only 40% of

the mortality improvements in their study could be explained by the income growth rate (1996, in Bloom and Canning, 2003).

As observed with human development, after a certain point increases in income have diminishing beneficial returns to health (Egger, 2009; Boyle *et al.*, 2006; Bhargava *et al.*, 2001). Preston (1976) reported that per capita incomes greater than $US 600 had little impact on health (in Bhargava *et al.,* 2001). Again, the exact income level at which diminishing returns begin is unclear. The World Bank for instance writes that it is $US11 000 (Hopkins, 2006). While this is a significant difference, it is important to note that the institution agrees conceptually with the idea that past a certain income level, income ceases to be an important determinant of further health.

Preston's study points in an interesting direction, suggesting that it is extreme poverty that plays a detrimental role in health. This idea is supported by others, who assert poverty is causally related to poor health (Subramantan *et al.*, 2002). Boyle *et al.* assert that poverty is an important determinant of mortality and poor health in all countries, demonstrating that to increase child health systematically, it is important to tackle poverty (through social programs and economic development) (2006). There is a tendency for authors to omit a distinction between different types of poverty. Ghai (2000) enriches the discussion by contending that income poverty is in fact not related to health, but that poverty, as conceived by the Human Poverty Index (HPI), is. The HPI takes into account social services and income available to the 'poor'. Graham (2001) argues that to obtain good health, individuals' life circumstances need to be addressed, recognising that

income poverty is only part of the problem. Education, working, environmental and housing conditions (all social determinants of health) are also part of the picture.

It flows naturally from the assertion that absolute income poverty is detrimental to health, that more equal societies are healthier, as this tends to reduce the number of people in absolute poverty.[27] In addition, if there are diminishing returns of income to health, a dollar spent by a poorer person will contribute more to their health than the same dollar being spent by a richer person. The distribution of income within a country is a powerful determinant of the country's overall health (Boyle *et al.*, 2006; Subramanian *et al.,* 2002; Keating, 1999). This is supported with data from Cuba, where the reduction of disparity is positively correlated with better health outcomes (Whiteford & Branch, 2008).

Evidently, appropriate government spending in health can reduce differences in health related to income. It is argued, in the same vein as with government expenditures relating to human development in general, that they can not continue in prolonged periods of low growth (Fic & Ghate, 2005; Gupta & Mitra, 2004). However, a number of studies find that health expenditures by the government contribute little or statistically insignificantly to health status. Others find a positive relationship. This indicates the importance of the *effectiveness* of the expenditure (Baldacci *et al.*, 2008). It is not the absolute amount of government expenditures on health which is most important in determining health outcomes, but rather the nature of the investment. In fact in many

[27] Thus, government intervention in non-health sectors has a generally progressive social impact on health. However, it should be noted that these expenditures and also those in education or infrastructure for instance, which have direct impacts on health, are not formally part of health expenditures. This implies a systematic underestimation of the costs of health. This discrepancy in calculation happens in all countries because of the positive externalities that certain investments have on health.

developing countries, health expenditures are found to benefit the rich *more than* the poor (Gwatkin, 2001). This demonstrates that merely increasing government health-related expenditures will do little to change health outcomes (World Bank, 2004; WHO, 2000; WHO, 2009).

It has long been established what 'good' government expenditures in health are. A health system based on primary and preventative health care, with particular attention to nutrition, water supply, sanitation, maternal and child health care, immunisation, prevention and control of endemic disease, treatment of common diseases and injuries, provision of essential drugs, widespread use of oral rehydration therapy and health education is highly effective at improving health and is also inexpensive (Alma Ata Declaration, 1978; UNICEF & WHO, 1975; Schofield, 1988; Griffin & McKinley, 1994). In fact, Haq asserts that developing countries do not need to increase their government expenditures at all, but merely re-orient them (2000). This lessens the importance of economic growth, as government revenues do not need to be expanded. Fryatt estimated that essential health interventions with large returns on health cost an average of $US 39 per capita, per year (2010). One of the reasons health can be pursued at low cost in poor countries is that it costs less. Primary healthcare is labour-intensive and labour in a low income country is relatively cheap (Sen, 2001; Haq, 2000). An equally important reason is that preventative medicine is significantly cheaper than curative medicine, and can significantly reduce the need for the latter (Whiteford & Branch, 2008).

The evidence points to limitations of economic growth in its ability to contribute to the pursuit of human flourishing through health. Both individual income and quality government expenditures eventually have diminishing returns on their ability to procure health. It appears that societies that eliminate poverty (not just income poverty) and become more equal can attain health at relatively low costs. Well-oriented public intervention in health has long been known to be inexpensive, yet highly effective. These findings suggest that health does not require unlimited economic growth, as measured by per capita GDP. Despite this, it is widely agreed that continued economic growth is desirable and will (somehow) help to bring about a healthy population (WHO, 2008; World Bank, 2004; Egger, 2009; Szreter, 1997). Sen writes that support-led development – that is, health at low levels of economic activity, driven by government investments – is possible, but that growth-led development is more desirable (2001).

Costs associated with improved health

The previous section was limited to a discussion of the relationship between improving health and economic growth and activity, often starting at a low health base, which is typical in a developing world context. However, it is well recognised that improvements in the overall health in a population are related to a demographic transition, which in turn has the potential to affect the cost of health. It may also have an effect on the ability to pursue health at stable levels of economic activity and as such deserves attention. In this final section the nature of the demographic transition and its link to aging populations will be explained. This is followed by a reflection upon the effect of aging populations

and lifestyle diseases on the cost of health care and the subsequent ability to pursue health at stable levels of economic activity.

The historically observed demographic transition has three stages: It starts with high birth rates and high death rates that result with stable or low population growth. In the second stage, improvements in health (due to better nutrition, public health measures, etc.) lead to decreases in death rates, while there is no change in the birth rate. This results in a sharply increased rate of population growth. The final stage of the demographic transition occurs when there is a decrease in birth rates, which converge with lower death rates. This brings population growth to a standstill (Todaro & Smith, 2006). The demographic transition that ends with low fertility and mortality rates is thus the direct result of improved health in a population.

In the final stage of the demographic transition, population aging occurs. Population aging refers to the change in the proportion of elderly (those aged 60+) in a population. This is mostly due to decreased fertility, not increased life expectancy. In fact, when life expectancy is initially increased there is a rejuvenation of the population[28]. However, the demographic transition indicates that increased life expectancy (and better health) is eventually related to decreased fertility rates, and thus population aging (Gondar & Negrin, 2000).

Changes in the structure of a population may change the costs associated with health. It seems evident that an aging population will increase the demand for healthcare. It is common to assume that the elderly have greater health expenses, related to the onset of chronic illnesses and deteriorating diseases (Donate-Armada, 2001). Longer life spans

[28]Life expectancy increases are often the result in improvements in the infant mortality rate.

increase the probability that new (and costly) diseases occur (Gandjour, 2009). However, on a global scale there is mounting evidence that the elderly are healthier than before. The term 'compression of morbidity' is used to describe the phenomenon of increasing length of healthy old age (Bloom *et al.*, 2010). In other words, the average 65 year old fifty years ago was less healthy than the average 65 year old today. As a result the health costs associated with an aging population are not constant. The standard approach to assessing the change in cost associated with an aging population is to assume that age-specific behaviour is constant and then examine the changes in the relative sizes of various age groups. This however is misleading due to improved morbidity and changes in behaviour (ie change in retirement age).

Zweifel *et al.* (1999) find that age has a limited impact on healthcare expenditure. Their results show that per capita healthcare expenditures are independent of population aging. For individuals over 65 years at the time of death, individual healthcare expenditures are the same for the last two years of life. Indeed, the researchers find that closeness to death (not an aging population) impacts healthcare expenditures. Their study has since been criticised on methodological grounds. Nonetheless, proximity to death is now recognised as having larger effects on the cost of healthcare than age (Weaver *et al.*, 2009; Gandjour, 2009; Dormont *et al.*, 2006; Seshamani & Gray, 2004). For instance, Weaver *et al.* (2009) find that while age may significantly affect the cost of healthcare, it would take more than ten years to get an age effect comparable to the effect of entering the last two years of life.

Bloom *et al.* (2010) argue that an aging population is not necessarily as intolerable a stress on society as is commonly forecasted.[29] Dormont *et al.* (2006) study the increase in per capita health expenditures that is observed in many countries with aging populations and demonstrate with data from France that the upward drift in expenditure is mainly due to the supply side (technology, pharmaceuticals), not demand (aging population).

The costs associated with lifestyle diseases are often lumped together the cost of an aging population. Lifestyle diseases are not however directly related to the aging population phenomenon. Lifestyle diseases are on the rise even in countries with relatively young populations and rapid population growth rates. These present additional burdens to the healthcare system. It should be noted that different diseases have different costs. Cardiovascular disease for instance demands care using expensive technology, but because it often results in a quick death it is less of a burden than lung cancer, which also demands expensive technology but is generally over a longer period of time. There is scope for a preventative (and less costly) approach to lifestyle diseases (Van Baal *et al.*, 2010).

This section serves to highlight that new challenges arise in public health policy that are the direct result of previous improvements. An aging population and the rise of lifestyle disease can affect the cost of per capita health and thus can influence the ability of pursuing health at stable levels of economic activity. Both point to eventually diminishing returns in health outcomes per dollar spent on health. However, it is clear

[29] Increased health costs are only part of the predicted burden for a society. Social security and the size of the labour force are two that receive much more attention. Bloom *et al.* argue that even these can be mitigated by good policy (2010).

that significantly extending life expectancies can occur with few resources and could potentially be achieved at stable levels of economic activity (as was demonstrated in the previous section).

Predictions of population demographics themselves are subject to error and consequently predictions about the costs associated with an aging population are also very difficult. The jury is still out on what the global effect of an aging population on health expenditures is. It is likely that the effect is subject to change depending on many variables, not least of which is public policy. Moreover, health expenditures are affected by the time to death but they in turn affect the time to death, by prolonging life (Seshamani & Gray, 2004). In chapters 4 and 5, we will return to this discussion with evidence from Cuba and Kerala.

Conclusion

The Human Development approach does not separate itself completely from economic growth. It is careful to establish conditions for good growth and then examines the links between growth and human development. The possible contributions of economic growth through household and government expenditures are clear. The evidence that for individuals, past a certain level of income there are diminishing returns to these benefits, is well established. Conclusions about levels of government expenditure needed to pursue human development are more tenuous. Generally academics in the field are reluctant to engage even in the exploration of human development at stabilised levels of income per capita. The examination of the benefits that economic growth can bring to health, further

serves as a justification to examine benefits of levelled off economic activity (in per capita terms), as the evidence points to unlimited economic growth ceasing to be beneficial and even being detrimental to the health of a population, past a certain point. Aging populations (indirectly resulting from health improvements) may however lead to increasing health costs and may affect the ability to pursue health at stable levels of economic activity.

The acceptance that economic growth can inhibit future human flourishing by degrading natural resources and that economic growth as practiced by the North can not be the means to human development may provide the stimulus for Human Development scholars to separate the distinct implications of various levels of economic activity and economic growth for the expansion of human flourishing. In the following chapters the analysis will focus on the government's ability to maintain human development expenditures, specifically in health, in the aim of addressing this gap.

Chapter 3:

Human development regimes in Cuba and Kerala: Investments in social determinants of health

The previous chapter established a basic framework to guide the analysis of the ability of governments to sustain human development expenditures, particularly in the area of health. Before proceeding to an analysis of health expenditures in the cases of Cuba and Kerala, this chapter will discuss other developments in the human development regimes in these two societies that contribute to health. The aim here is not to establish how or why these regimes came about but to provide a context for our analysis of health expenditures, and our thesis argument.[30] The importance of this analysis, and its relevance for our thesis, derives from the findings reviewed in the previous chapter, namely, that 1) poverty reduction greatly impacts health outcomes; 2) more equal societies tend to be healthier societies; and 3) many factors influence health that are not counted as health expenditures (i.e. housing, water infrastructure, working conditions, education, etc). It would be a mistake to analyse changes in the social condition of health in Cuba and Kerala without giving consideration to the larger human development efforts by the state, as these made non-health investments with direct and indirect impact on health and have contributed to poverty reduction efforts and redistributive measures.

[30] The author does not claim that this is the only way human development regimes can take place, or that human development can be achieved. It is, however, a way. As such it deserves our attention.

Cuba and Kerala are often praised for their relative success in achieving human development outcomes and as such kindle much academic interest. Both are featured as case studies in *Development with a Human Face* (2000) and *Social Development and Public Policy* (2000), and are invariably profiled in diverse publications about human development. Starting with the successful revolution in Cuba in 1959 and the election of a Communist government in Kerala in 1957, both governments pursued policies aimed at human development, even though as a conceptual framework Human Development had not yet come into being. Both societies moved away from their previous high levels of inequality and poverty at an exceptionally rapid pace.

Given the fluidity of human development, pursuing it is not a matter of following a checklist or adopting an infamous 'cookie cutter' approach. However, if state action is dedicated to the general expansion of capabilities, it can be considered to be a human development regime – a state focused on human development (Mehrotra, 2000a). There are some aspects of human development that when pursued by a state are recognised as being highly influential in bringing about human development. Measures that increase health, education, social security and employment opportunities all contribute to the expansion of human development, as they contribute to the formation of capabilities and the ability to put them to use. Minimally, capability is "the basic capacity to avoid ignorance, undernutrition, disease, and early mortality and lead a fuller, longer life and be able to participate in decision-making in the community" (Mehrotra, 2000a: 21). Another important component of human development is agency, and while not expanded on here,

in both Cuba and Kerala people exerted their agency and were essential in the founding and continuity of the new political systems through their participation.

While Kerala and Cuba have actively pursued policies that have human development outcomes, the reader should neither assume that all aspects of human development have been pursued simultaneously, nor that all citizens have benefited equally from these reforms.

This chapter will begin by tracing a brief history of Cuba leading up to the revolution. This is followed by an analysis of the mandate of the revolutionary government as it relates to land, housing, employment and education, in addition to other relevant changes. A similar analysis will be carried out for Kerala, tracing a brief history and then the priorities adopted by the (changing) state government, focussing on land, food distribution and education. Finally, the similar equalising nature of the reforms in Cuba and Kerala and their implications on health will be discussed. While the governments of Cuba and Kerala have both continued equalising measures over the years, the focus of this chapter will be on the first two decades of change (the 1960s and 1970s).

Cuba: The revolution as a Human Development project

In 1902 Cuba formally became an independent country from Spain. However, the United States secured the formal ability to intervene in Cuba with the Platt Amendment, which was valid until 1933. For twenty one years starting in 1937, General Batista controlled Cuba with the support of the United States (Goicoechea-Balbona & Conill-Mendoza,

2000). In 1959, a new government headed by Fidel Castro took office, following the Cuban Revolution.

Before the Revolution, Cuba had similar levels of inequality with neighbouring countries in South and Central America. There were considerable differences in the wealth and welfare of the Cuban population. The economy was based on the export of sugar. In 1958, owners of 22 large estates controlled 70% of the area in sugar and 20% of the country's 9 million hectares in agriculture. Thirteen of these estates were owned by Americans or corporations. More than 70% of all land in farms was controlled by 8% of the landowners, and two thirds of the agricultural workers were landless (Barraclough, 2000). The poorest 40% of the population had about 0.066% of the national income. Only 60% of the labour force had old age and disability pension, and there was no health insurance or unemployment compensation (Cole, 1998).

Barraclough (2000) reports that in 1958, the government spent approximately 10% of its budget on health and education respectively. It is important to recall the discussion in the previous chapter about the nature of expenditures. While it is true that Cuba had a fairly well developed health and education system, it is important to note that access to these was reserved for a class of privileged citizens. While primary schooling was theoretically free and mandatory since Cuba's independence from Spain, low income rural children had little (or no) access to them (Barraclough, 2000). As a result, in 1953, the enrolment ratio in primary schools was 58%, in secondary schools 19% and in universities 5.5%. These ratios were higher that the regional average. The under five mortality rate was also better than the regional average (87 versus 157 deaths per 1000

live births) (Mehrotra, 2000b). However, there were still significant differences in access to health and education facilities in Cuba. Malnutrition and poverty were rampant. Differences between rural and urban areas were substantial.

The revolution in 1959 changed the country's development priorities. These became national autonomy, poverty alleviation and a more egalitarian access to basic goods and services for all Cubans (Barraclough, 2000). Castro described this new orientation in his famous speech *History will absolve me* in 1953:

> The problem of the land, the problem of industrialisation, the problem of housing, the problem of unemployment, the problem of education and the problem of people's health: these are the six problems we would take immediate steps to solve (Castro, 1953: 27).

Indeed, the new government immediately took action in these areas. These, in addition to other reforms, will be discussed in the following paragraphs. The discussion of reforms in health however will be left for Chapter 4. In 1962 35.7% of the government expenditures were allocated to social services such as education, health, housing, social security, sports and recreation. This indicator has consistently remained above 30% (Vazquez & Valdes, 2007). Data on social services (and the breakdown within social services) is not readily available in Cuba until 1978, when the national budget was reintroduced. Mesa-Lago reports that the budget allocated to social services decreased to 32.7% in 1965 and that while data is unavailable, it is likely that "expenditures to social services gradually declined during the frugality of the second half of the 1960s and recuperated with the economic boom in the first half of the 1970s" (1981: 164). Thus a similar proportion was allocated to social services in 1978 (32.8%) as in 1965 (Mesa-Lago, 1981). Despite the lack of information for a decade, all sources

agree that public resources dedicated to education, health and social security increased dramatically after the revolution, benefiting the majority of the Cuban population (i.e. Barraclough, 2000; Saney, 2004; Vazquez & Valdes, 2007). Cuba's Gini coefficient dropped from 0.57 in 1958 to 0.28 a mere four years after the revolution (Ranis & Kosack, 2004).

In 1959-1960, the first Act of Agrarian reform was passed. This reduced rent in urban areas by fifty percent, put ceilings on the legal size of landholdings and granted share–croppers, tenant farmers and landless labourers legal title to the land they tilled (Vazquez & Valdes, 2007; Cole, 1998). The first land reform expropriated estates that were larger than 403 hectares. This was followed by a more radical land reform in 1963, which expropriated estates that exceeded 67 hectares in area (Barraclough, 2000). The reforms were thoroughly implemented, resulting in more than 110 000 people gaining land titles (Saney, 2004). The majority of the land however, was transferred to peasants through cooperatives, which were shortly after converted to state farms. By 1968, when most of the economy had been collectivised and was owned and run by the state, still 30% of all agricultural land was owned and operated by small farmers. By the early 1990s, this decreased to just over 20% (Barraclough, 2000).

In 1959, rent was reduced by 30-50% in urban areas, relieving workers from a burden that previously consumed roughly half of their earnings. This was followed by an Urban Reform Law that aimed to change tenants into homeowners through a slow purchasing process, and to build new houses. Rent on new housing was initially set at 6% of total family income and this increased to 10%. However, the retired and ill pay 8

pesos per month, and families with monthly per capita incomes below 25 pesos do not pay rent. By 1972, three quarters of Cuban homes were lived in by their owners and only eight percent were paying rent (the remainder were either excluded from paying rent or in the process of buying their housing) (Saney, 2004; Stewart, 2006; Mesa-Lago, 1981). The worst shanty towns were eradicated, and residents were relocated to better housing. The first effort started in 1960 and residents were relocated to communities of 100 to 150 dwellings that had facilities (including schools and health clinics). In the 1970s micro brigades built 100 000 new homes. However, the problem of overcrowding was not fully addressed even by these measures (Vazquez & Valdes, 2007). Despite the ongoing difficulties in housing, there was nearly universal access to minimally adequate shelter (Barraclough, 2000).

The new government also took action to increase social security, ensuring the protection of all workers and their families in situations of disease, maternity, work accidents, old age and death. In addition to this, the government also pursued a policy of full employment. This succeeded in decreasing unemployment from 12.5 % in 1958 to 9% in 1962 and 1.3% by 1970 (Vazquez & Valdes, 2007). In addition to guaranteeing employment, the government established better working conditions. The minimum wages in agriculture, industry and commerce all increased (Saney, 2004).

Reforms in education ensured universal access and improved quality for all Cubans. Within a decade, illiteracy was halved (Baraclough, 2000). Education was established as a free right under the responsibility of the state from kindergarten to university. In 1961 education was nationalised (Vazquez & Valdes, 2007). Also in 1961

a massive nine month literacy campaign was carried out. Over 100 000 volunteers were mobilised to teach approximately 700 000 illiterate adults basic literacy skills. When the literacy program campaign ended, programs were launched to elevate the people's education level through night schools conducted in various settings (Mehrotra, 2000b). Community members also made efforts to encourage the enrolment of children in primary schools and to identify illiterate adults (Barraclough, 2000). In 1958, 700 000 children were enrolled in school. One year after the Revolution, this had increased to one million. By 1975, there were 1.8 million children enrolled in primary school (Mehrotra, 2000b). In the 1970s the minimum level of education for the whole population was raised to the sixth and then the ninth grade (Vazquez & Valdes, 2007). By the 1980s, secondary education was nearly universal. Access to education in rural areas was given special attention. In 1958, there were 7,500 primary schools in the entire country, which were disproportionately concentrated in urban areas, and none of the secondary schools were located in rural areas. By 1975, there were 13,000 primary schools in rural areas, with an additional 2,800 schools in urban areas. Secondary schools were built in the countryside (Mehrotra, 2000b). Researchers from the University of Havana estimate that public per capita expenditures on education increased from 3 pesos per annum in 1959 to 99 pesos in 1989 (Barraclough, 2000).

A rationing system was put in place in 1961 and generalised in 1962. Ration shops were established in every rural and urban neighbourhood, ensuring that every Cuban had access to a 'minimally nutritious diet at very low fixed prices' (Barraclough, 2000, 250). While the availability of some rations did vary in relation to general food

availability, the basic minimum was supposed to be available at all times. Children, pregnant women, the ill and elderly receive supplementary rations. Moreover, meals are served in cafeterias in schools and also at some workplaces (Barraclough, 2000). Nutrition in 1967 had already improved significantly compared with data from a decade earlier (Mehrotra, 2000b).

In addition to more fairly priced food and necessities (soap, cooking oil, etc) in ration shops, prices of other essential commodities were reduced in the early 1960s. For instance, pharmaceutical prices were reduced by 15-20% and the price of electricity dropped by 30% (Saney, 2000). Local phone calls and water charges were eliminated until 1973, when they were made available at low cost (Matthews, 1975).

Recognising access to clean water and sanitary facilities as being important aspects of public health, the government also made efforts on both of these fronts. In Havana efforts had been started earlier in the century by a joint American-Cuban venture. As a result, rural areas were the target for most of the installations of piped water and sanitation facilities that were pursued by the government (Brenner *et al.*, 2008; Mehrotra, 2000b). According to the 1981 census, half of all homes in Cuba had indoor plumbing (most of them in urban areas) (Mehrotra, 2000b). By the mid-1980s, more than 80% of the population had access to clean water and had acceptable sanitary facilities (Barraclough, 2000; Mehrotra, 2000b).

The dedication of the government in pursuing equalising policies played out in policies for the entire population, such as those discussed above, but also in targeting particular social groups. From the very beginning, the revolution targeted women and

children. Several sections of the Cuban constitution refer explicitly to gender equality. The infringement of the right to equal treatment is considered a criminal offence (Mehrotra, 2000a). In 1960, the *Federación de Mujeres Cubanas* was founded. This worked to promote women and women's priorities and concerns. The Federation grew from 400 000 members in 1962 to 3.2 million in 1990, and has influenced decision-making at all levels of society (Mehrotra, 2000b). It promoted equal employment opportunities, maternity leave, and day care centers among other things. The Mother-Child Health Program is an example of how the government targeted women and children in particular (details will be discussed in the next chapter). The prioritisation of children can be seen in the 1960s and 1970s through the building of day care centres, the training of primary school teachers and the implementation of vaccination campaigns. Today the government is particularly attentive to the needs of children, youth, women and the elderly, and has more than 100 programs targeting particular social groups (Dominguez, 2009).

Kerala: A policy framework for human development

India gained its independence from Great Britain in 1948. Kerala became governed as an Indian state in 1956, with the integration of Malabar with Travancore and Cochin under the Indian States Reorganisation Act. Kerala is a geographically small, densely populated, predominantly rural state in south western India, bordering the Arabian Sea (Parayil, 1996).

Kerala is one of twenty-eight states belonging to the federal republic of India. Its position within the Indian context merits a brief explanation of State-Center relations. State governments in India have the right to levy certain taxes and also have the right to share the proceeds of central taxes. The Constitution recognises that assigned sources of revenue are inadequate to meet the expenditure responsibilities of the state government and provides a mechanism to transfer funds from the centre to the state. Generally, in central-state transfers, poorer states receive more substantial transfers. Initially, this worked to Kerala's advantage, as it used to be among the income-poor states. The state governments also have the right to raise loans and have various rights, responsibilities and duties in respect to planning and economic development (Rao, 2000; Sathyamurthy, 1985).

Every Indian state has a Governor, and this position has evolved as an administrative head of a state government, representing the central government, who is able to intervene on specific matters. When the central government changes, it has the power to change Governors as well. The Governor is a powerful tool for the central government to intervene in state politics and policies (Sathyamurthy, 1985). In Kerala, democratically elected state governments historically encountered difficulties passing legislation that the central government was ideologically opposed to, due to interventions by the Governor (examples of this will follow). However, for the most part, the state government of Kerala has been able to pursue development policies of its choice, and these will be examined below.

It is difficult to describe social conditions for Kerala as a whole before it was formed, as there were significant regional variations, that arose precisely because it was not governed as one political entity. Until 1949, Travancore and Cochin had also been separately governed entities. In Travancore and Cochin, benevolent princely states had pursued some social development policies. Significant efforts were made in Travancore to spread education and literacy. Free and universal education was an objective of public policy. However, at the end of the nineteenth century, less than 25% of the men and 5% of the women were literate (Ramachandran, 2000). Tenancy and landlordism were virtually abolished through a slow process of reform led by the state (Varghese, 1970). Malabar on the other hand, was under direct rule of the British for a long time and its health, education and other social indicators resembled the rest of India in the mid 1950s (Krishnan, 2000). In Malabar, land distribution was highly unequal and was a matter of considerable dispute, fostering a great deal of political mobilisation. This met with little success, despite the implementation of the Tenancy Act in 1930 and repeated amendments and revisions made to it. Landlords successfully managed to find loopholes in legislation to continue to act in their own self-interest at the expense of their tenants and the agricultural labourers (Rahakrishannan, 1989).

In 1957 the first elections were held in Kerala and the communist party[31] gained power. Since then, regular elections have been held with different coalitions rotating in

[31] The Communist Party split from the Kerala Congress Socialist Party in 1940. It further split into the Communist Party of India (CPI) and the Communist Party of India (Marxist) (CPI(M)) in 1964.

and out of office[32]. While the communist party has never held office for more than two consecutive terms, the state government has always vigorously pursued human development (Sandbrook *et al.*, 2007; Panikar, 1979).

The newly elected communist party proposed a comprehensive Kerala Agrarian Relations Bill (KARB) by the end of 1957 to address the pressing land issue. The land owners were vehemently opposed to the bill. When it was passed in 1959, they led fifty days of opposition, which resulted in the dismissal of the ministry and the imposition of the President's rule in Kerala by the central Indian government. In 1967, the CPI (M)-led Union Front was elected to power and by 1969, they successfully restored all the major KARB provisions. The Union Front disintegrated; however, a new coalition was formed and although it too fell apart, it was able to remain in office long enough to successfully implement the Kerala Land Reform Amendment Act (KLRAA). The KLRAA had three main clauses: 1) ownership rights of the tenanted lands to the cultivating tenants; 2) optional rights to occupants of homesteads to purchase homesteads and; 3) ceiling on holdings, the surplus to be distributed to the landless and land-poor (Radhakrishnan, 1989). The state also provided material and technical support to farmers. State agencies invested in irrigation, co-operative credit and various other subsidies, as part of their support for farmers (Tornquist, 2000; Raj & Tharakan, 1983; Korup, 1988). There was a drastic reduction in the number of landless households, from 57% of the population in 1966 to 14% in 1982. However, this figure can be somewhat misleading, as approximately three quarters of the newly landed households owned less than half an acre

[32] There are many parties in Kerala and in order to form a government, historically coalition governments have been formed. These have been led by either the Indian National Congress or by the Communist Party of India (Marxist) (Government of Kerala, 2006).

of land (Radhakrishnan, 1989). Moreover, plantations were excluded from the redistributive land reform. Eight percent of holdings were over five acres (an average of approximately eleven acres) and represented 49% of total land. Most of the very large holdings were plantations (Herring, 1983). Thus a significant portion of the land was not subjected to redistribution.

The majority of large land holdings prior to the KLRAA was land that was leased. As a result, most of the redistributed went to tenants. The second and third components of the land reform addressed the needs of the landless labourers. Landless labourers were entitled to purchase their homestead at 25% of the market value, half of which would be paid by the government and the other half paid by the worker over 12 annual instalments (Herring, 1983). Homesteads are not much larger than the surface area occupied by the house. The third component was designed to increase landless labourers' land. However, the land ceiling was set at a relatively high level considering the land pressure. A single adult was permitted to own 5 acres and there was a maximum of 20 acres for a large family. In practice, the landlords had time to evade much of the redistribution. They could underreport the land that they owned, but also had enough time to redistribute the land among their family and friends, in order to comply with the ceiling, without actually losing the land. This final redistribution to the landless has been heavily criticised on its failure to be meaningfully implemented (Herring, 1983; Radhakrishnan, 1989; Varghese, 1970; Omvedt, 2006).

Thus, despite the significant redistribution of land, agricultural wage labour continued. Mobilised workers were able to secure increased wages and better working

conditions (Parayil, 1996). Alexander (1980) reports that between 1964 and 1969, the real wage of agricultural labourers increased by more than 65% and the money wage increased by 140%. Pensions were given to aged agricultural workers (Nair, 1994). Duvvury (1994) lists 25 welfare programs (17 of which began in the 1980s), including schemes targeting agricultural workers, toddy tappers, head-load workers, artisans, fisherpeople, cashew workers, coir workers, handloom workers, construction workers and also pension plans for handicapped and unemployed persons. Other welfare measures include financial assistance to widows for the marriage of their daughters, to patients suffering from tuberculosis, leprosy and cancer, to permanently disabled people, to the unemployed and to women desiring to start microenterprises (Nair, 1994).

The One Lakh Houses Scheme[33] was implemented as a follow-up to the KLRAA, designed to provide permanent dwellings for landless agricultural labourers who had not received homesteads. Roughly half of the construction costs were subsidised by the state, with voluntary donations and contributions from the recipient completing the cost. The housing project also had important employment-generating outcomes, serving partially as a public works program (UN, 1975). Nair (1994) reports that the number of houses increased at a faster pace than the population did. By 1988, 57 000 dwellings had been built under this program (Franke & Chasin, 1994). In addition to the important subsidies that the state provided to housing creation, there were also attempts to improve the housing conditions of low income groups. Tens of thousands of low income families had houses improved under various schemes by the state. The government invested in water supply systems (WHO, 1984). The state also dedicated itself to the sanitary disposal of

[33] Lakh means 100 000.

human waste (Franke & Chasin, 1994). While this did feature as part of the state's intervention, it was less significant compared to other interventions (Mehrotra, 2000c). Unsafe water and unsanitary disposal of human excrement continue to impact morbidity in Kerala (Panikar, 1999; Sibbons, 1992).

The Keralan state prioritised education and drafted the first Education Bill in 1957 (Lieten, 2002b). It ensured geographic, economic and social access to education. Schools were built within walking distance of homes, fees were eliminated and members of all social groups (regardless of income, gender or caste) were welcomed in the institutions (UN, 1975). In 1957 middle schools were made free and in the 1960s secondary schools also became free of charge. Enrolment rates are high in Kerala and since 1961 have been roughly equal for both boys and girls aged 6-11 (Krishnan, 2000). The number of public schools doubled in one decade. The number of pupils enrolled in primary schools also doubled in the first decade and in secondary schools it tripled (Lieten, 2002b). On average the government allocated 40% of its budget in the 1960s and 1970s to education. The expenditure was geared particularly towards primary education, with special attention given to Malabar and students from scheduled castes and scheduled tribes (Nair, 1994). A literacy campaign, involving about 400 000 volunteers, was carried out in the 1960s to accompany the renewed emphasis on education (Krishnan, 2000).

Ration shops in Kerala provide rice, flour, cooking oil and kerosene at about half the market price. Ration shops are well distributed in Kerala and widely used. Food purchases from the public distribution system (PDS) in Kerala account for roughly 50%

of total rice and 90% of wheat sales. In the late 1980s, approximately 85% of consumers met all or part of their rice requirements from ration shops (Ramachandran, 1996). The poorest 30% of the population purchases about two thirds of its rice and wheat through ration shops. These shops first appeared in Kerala in 1942, and were brought under government control in 1943. The widespread and effective public distribution system in Kerala however, is a post-1956 phenomenon. The central Indian government subsidises the PDS by covering the difference between the issue price and the cost of procurement. It can be noted that while the PDS is not unique to Kerala, it operates considerably more effectively and extensively there than elsewhere (Kumar, 1979; Suryanarayana, 2001).

The distribution of food is also carried out in primary schools, where students are provided a hot lunch every day. This began in Tranvancore and Cochin, targeting children from low income families in some primary schools in the 1940s. In 1961 the lunch program was expanded to include all students in all primary schools in Kerala (Nair, 1994). Initially the state financed the expanded lunch program with the help of the international nongovernmental organisation CARE. The state has assumed full financial responsibility since then. The program started out providing free lunches for students in the first four grades, and in 1987 this was expanded to include the full seven grades (Franke & Chasin, 1994). Other food distribution programs include food distribution at primary health centers and sub-centers and to preschool children and expectant and nursing mothers. There are an additional 2000 feeding centers for tribal children and slum children (Nair, 1994).

Franke and Chasin (1994) point out that another important area of intervention was in the systematic attack on the caste system. Movements against the caste system began in Kerala as early as the 1820s. The Communist movement allied itself with the members of lower castes. While members of Scheduled Tribes and Scheduled Castes continue to represent poorer segments of Kerala, an effort has been made to provide education opportunities (through scholarships) as well as employment opportunities (through affirmative action).

Comparing Cuba and Kerala: Human development and health implications

While the nature of the reforms carried out in Cuba and Kerala does differ on occasion, there are a remarkable number of similar areas of intervention. Both governments implemented a redistributive land reform, made efforts to expand education and literacy levels, implemented programs to assure adequate housing (with special attention to water and sanitation), virtually eliminated severe malnutrition, and increased social security. Moreover, conscious efforts were made to reduce rural-urban, male-female, low-high income and caste disparities in the programs implemented. Two major observations can be made in both Kerala and Cuba: the general standard of living increased, while simultaneously inequality decreased. There was a decrease in differences between rural and urban, men and women, high and low income in both Kerala and Cuba. Many of the reforms resulted in intrinsically desirable outcomes and also had virtuous effects on other elements of human development. These outcomes were the result of a deliberate and engaged human development project in both societies. The policies implemented were

guided by certain models and principles in the different, yet similar, human development regimes of Cuba and Kerala.

The various policies had important implications on social determinants of health. In this section, the benefits of increased access to education, nutrition and housing on health outcomes will be discussed. Finally, the general impact of greater equality on health will be re-emphasised.

It is well recognised that increased education can result in higher health outcomes. Education is seen as an important factor governing the utilisation of health services (Government of Kerala, 2006; UN, 1975). For instance, in a sample of 144 countries, measuring the extent of correlation between health outcomes and inputs related to health, of the six highest correlations, five were related to education. Total enrolment rates in both primary and secondary schools are highly correlated to under-five mortality rates and life expectancy (Mehrotra, 2000a). Formal education can serve as a tool for specific health education about healthy lifestyles, sanitation and nutrition (Alma Ata Declaration, 1978). It is observed that female education has particularly strong influences on health outcomes: educated women have healthier children, and infant mortality is lower proportionally to the number of years of mothers' schooling (Mehrotra, 2000a). Maternal literacy and schooling are associated with increased earning capacity and care-taking capacity, as well as with "more efficient management of limited household resources, greater utilisation of available health services, better health-care practices, lower fertility and more child centered behaviour" (Mehrotra, 2000a: 40). Caldwell (1986) presents data that demonstrates the synergy between access to health facilities and access to

education. When both education and health facilities are easily accessible, there is an 87% gain in life expectancy. By contrast, increased access to either health or education results in significantly lower gains in life expectancy: 20 and 33% respectively. It can thus be concluded that the education reforms in Cuba and Kerala positively impacted health outcomes (UN, 1975; Ramachandran, 2000; Barraclough, 2000).

The link between increasing access to nutritious food and health outcomes is intuitive. Vast numbers of people die in the developing world from diseases associated with malnutrition (UNICEF & WHO, 1975). Nutrition affects the growth and resilience of the human body throughout the lifespan. Good nutrition results in a healthier body more resilient to disease. Early nutrition (or lack thereof) can have a lasting impact on health. As a result nutrition is particularly important during pregnancy, infancy and young childhood (Haq, 2000; Mehrotra, 2000c; WHO, 2000). The similar food ration systems set up in Kerala and Cuba are both available to the general population, in addition to specifically targeting expectant mothers, infants and young children. These programs certainly have a positive impact on health.

The impact of housing on health is slightly less self-evident. However, it is widely recognised that overcrowded housing is unhygienic (WHO, 2008). Ensuring that households have access to clean water and sanitary waste disposal systems plays an important role in preventative health. Unsafe water and unhygienic waste disposal increase the likelihood of waterborne and infectious diseases. Both Kerala and Cuba addressed the problems of overcrowding amongst the poorest segments of their populations. Cuba made advances in water supply and infrastructure that while initiated

in Kerala, have not been seen to the same extent. As a result, waterborne and infectious diseases are prevalent in Kerala while they have been virtually eliminated in Cuba.

Finally, generally poverty-alleviating and equalising policies have positive impacts on health, as seen in the previous chapter. These are featured as one of the three major recommendations in the World Health Organisation's 2008 *Closing the gap in a generation*. As such, the WHO endorses redistributive land reform, improved wages and working conditions and general social security. In this light, Cuba and Kerala's redistributive land reforms, improved labour conditions and increased measures to guarantee social security can be counted as contributors to the health outcomes of their populations.

Conclusion

In sum, the human development regimes established in Kerala when it became a state and in Cuba with the success of the revolution, carried out various reforms that impacted poverty, inequality, capabilities and resulted in significant improvements at the level of health. Progress in these areas and the improvement in the health of the population, were founded in the achievements of the regimes before the human development regimes were established, but flourished under the newly created framework of institutions and policies. It is clear that these reforms were highly effective in alleviating poverty and in creating conditions of greater equity and equality. Whether they were technically efficient (inputs are employed in such a way as to maximise desirable outputs) is another matter. However, Barraclough (2000) suggests that in Cuba's case they were. Ramachandran

(1996) makes similar, although less explicit, observations for Kerala. Regardless, as the focus of the next chapters turns to the resources invested in health, it is important to recall the interventions in social determinants of health discussed in this chapter. As the WHO explains, sustained improvement in the health status of a population can *only* be achieved through the combined impact of a wide range of socioeconomic developments (1984). As the coming chapters will show, the reforms and impressive achievements in Cuba and Kerala were carried out at low levels of economic activity that often coincided with low (or stagnant) economic growth.

Chapter 4:

Cuba: Health Inputs, Outcomes and Sustainability

Cuba is renowned for the high quality and access of its health system, and the ensuing health of its population. In 1998 the World Health Organisation awarded then president Fidel Castro with the 'Health for all Gold Medal', recognising the remarkable health achievements that Cuba has made (Saney, 2005). The healthcare system that has been built and the impressive health outcomes that it has achieved receive much scholarly attention. This analysis will stray from conventional Human Development analyses of Cuba in order to pursue a question that is not posed in Human Development studies: do good health outcomes require continually increasing inputs? This allows for a consideration of the importance of levels of economic activity instead of the conventional economic growth.

As outlined in the introductory chapter, there are four main variables that are captured by this question: health outcomes, government expenditures on health, fiscal (im)balance and levels of economic activity. Data on each of these elements will be presented, to allow for a discussion at the end of the chapter. The analysis follows a typical Human Development path up to the discussion. Each aspect presented is of interest in Human Development studies. In the discussion at the end, the relationship between health outcomes, government budgets and economic growth will be briefly engaged. However, the chapter then shifts gears and turns to the lessons that can be extracted for a discussion of the pursuit of health at levelled off economic activity. The

focus of the chapter is on the resources invested and on the health outcomes. The recognition that the quality of expenditure is a more powerful determinant of health than the quantity of the expenditure requires an examination of the health system in Cuba. The health system that has been developed lends itself to effective expenditures. In order to discuss the health system in revolutionary Cuba it is of course important to have a general idea of the health situation before the revolution. Hence, that is where the chapter begins.

Health in pre-revolutionary Cuba

At the turn of the twentieth century, there were extensive sanitary reforms implemented in Cuba. These were encouraged by the United States (presumably to keep trade running smoothly). They resulted in the first recorded lasting improvements in mortality in Cuba (Diaz-Briquets, 1983). In the first half of the twentieth century, sugar continued to be an important export for Cuba. In the 1950s, sugar accounted for close to 90% of exports and sugar cane was grown on 60% of cultivated land (Barraclough, 2000). During the period between independence and the revolution, the mortality trend was highly sensitive to changes in the economy. When economic conditions improved, so did mortality rates; similarly, during the 1930s, when there was an economic downturn, mortality rates worsened. Living conditions were directly affected by changes in the value of sugar exports. Although Cuba was an agricultural exporter, it imported much of its food. As a result, when foreign exchange was scarce, less food was imported (Diaz-Briquets, 1983).

In 1959, the new Cuban government inherited a healthcare system that was relatively advanced for the developing world (Ghai, 2000). The facilities were not shared

equally among the population, however. Primary care for the poor and rural population was virtually non-existent (Cooper *et al.*, 2006; Diaz-Briquets, 1983; Roemer, 1976). Approximately half of Havana's population were members of *mutualistas* – a system of privately financed healthcare used mostly by the rich, who were able to afford it (Diaz-Briquets, 1983). *Mutualistas* had double the government's health budget and controlled most of the resources (Nayeri, 1995). In 1959 one university and medical hospital existed along with a dominant private and rudimentary public heath sector (Cooper *et al.*, 2006). Two thirds of the 6300 physicians and four fifths of the medical beds were located in Havana (Barraclough, 2000). Fewer than 1,500 of the physicians worked in the public sector (Roemer, 1976). Cuba imported 40,000 pharmaceutical products, of which 80% came from the United States before the Revolution (Nayeri, 1995).

Health and the Revolution

The repercussions of the revolution were not only national, but had well-known implications in international relations. The United States declared a trade embargo on Cuba. This had several ramifications for health. Indirectly health was affected through the change in food availability, the shock to the economy and the ability to import pharmaceuticals and medical equipment. Perhaps even more importantly, the revolution resulted in a massive emigration of doctors. By the mid 1960s, 3000 physicians had emigrated, mostly to take up residence in the United States (Cooper *et al.*, 2006). While before the revolution there were 920 citizens for one doctor, this ratio worsened to 1,200

-1,500 between 1962 and 1964 (Mesa-Lago, 1981). Thus, some results of the Revolution had an initial negative impact on health.

The setbacks did not prevent the new government from declaring healthcare to be a right. In the 1960s, a healthcare system was created to cover the entire population (Nayeri, 1995). The evolution of healthcare in Cuba was shaped by four basic principles of the new government: health is the state's responsibility; health is a social and biological issue; health is a national priority; and developing countries can have primary and preventative as well as tertiary care. Cuba focuses on inexpensive preventative healthcare (Whiteford & Branch, 2008). As the Ministry of Health explains:

> El sistema national de salud se basa en los principios de salud pública socialista, mediante los cuales se reconoce el derecho a la población de recibir de forma gratuita los servicios prestados por las insituciones dedicadas tanto a la asistencia médica como a la asistencia social. (Ministerio de Salud Pública, 2009, 270).

In the first six months following the change of government, there were no significant changes in healthcare. In August 1960, José Ramón Machado Ventura was appointed Minister of Health and this was the beginning of a new health system in Cuba. First, the Ministry was reorganised at a central level. In 1961 MINSAP, the Ministry of Public Health was created. In the same year, all major private hospitals were nationalised (Mesa-Lago, 1981). A slow integration of all other health facilities into the public domain started in 1962, and by 1970 the last *mutualistas* were integrated. MINSAP also slowly nationalised the pharmaceutical industry in Cuba (Roemer, 1976). In 1963, health care became state administered and almost exclusively financed by the Cuban government. Preventative care, diagnostic tests and medication for hospitalised patients are all free.

People are financially responsible for their own medication, dental care, hearing aids and wheelchairs; however these are made available at subsidised prices and are free for low income people (Spiegel & Yassi, 2004; Mesa-Lago, 1981).

Alongside these administrative changes, action was taken to quickly change the health situation. The immediate shortage in doctors spurred the training of new physicians. Only in 1976 was the pre-revolutionary ratio attained (access to physicians for the general population had improved even before this ratio was achieved). By 1978, Cuba had the lowest ratio in all of Latin America with 675 people per doctor (Mesa-Lago, 1981).

In 1962 the first polyclinics were introduced. These would be the basis for health care for the next decade. Each was staffed by a general practice physician, a nurse, a paediatrician and a social worker. They were charged with the provision of health care in workplaces, child care centers, homes and neighbourhoods. They did health screening, vaccination, blood drives, neighbourhood vector control activities, and organised community based participation (Whiteford & Branch, 2008).

Mass campaigns against polio, malaria and tetanus were launched in 1962 (MacDonald, 1999). The Committees for the Defence of the Revolution (CDR) worked in community health outreach and were used to ensure the thorough implementation of the campaign in the target areas. They were also used to monitor pregnant women and give advice on pre-natal care, breastfeeding and registration at birth (Hirschfeld, 2007; Diaz-Briquets, 1983). Before the revolution, a relatively high number of births already

took place in hospitals (63%). This increased to 73% in 1965 and 91% in 1970, having important implications on maternal and infant mortality (Mehrotra, 2000b).

The stark difference in rural and urban physical access to health facilities was another primary concern in the first years. This is reflected by the changing percentage of the health budget spent in Havana: it was reduced to 43.7% by 1968, compared to an earlier 60% (Roemer, 1976). By 1963, 122 rural health centers and 42 rural hospitals were established (Hirschfeld, 2007). Newly trained physicians were obliged to serve one year in rural areas, in order to make access to physicians more equitable. This was later extended to two years (Waitzkin, 1983).

In the early 1970s, the polyclinic model was evaluated. It was found to be "cumbersome, inequitable, and inefficient" (Whiteford & Branch, 2008: 22). In 1974 the polyclinic's functions were expanded to include care for the elderly and treatment of chronic disease. The healthcare system was modified to the Community Medicine model in the mid 1970s. This introduced research and teaching activities to the polyclinic, as well as assessments, risk evaluations and extended hours of continuous care.

In the 1980s, the system evolved further to the Family Doctor Program. This placed a doctor and nurse in every Cuban community (Spiegel & Yassi, 2004). By the 1990s, the goal of having the pair serve between 120 and 160 families was reached (Cooper *et al.,* 2006). The doctor and nurse live in the community and observe people's quotidian lives. They are able to make routine home visits. In this capacity they are able to observe behavioural risks and lifestyle patterns, and intervene before hospitalisation is required. In the home visits, they are able to make several check-ups at once, ensure

preventative care and reinforce good health behaviours. They also see their patients when they come to the clinic (Whiteford & Branch, 2008; MacDonald, 1999; Perez, 2008).

Health outcomes

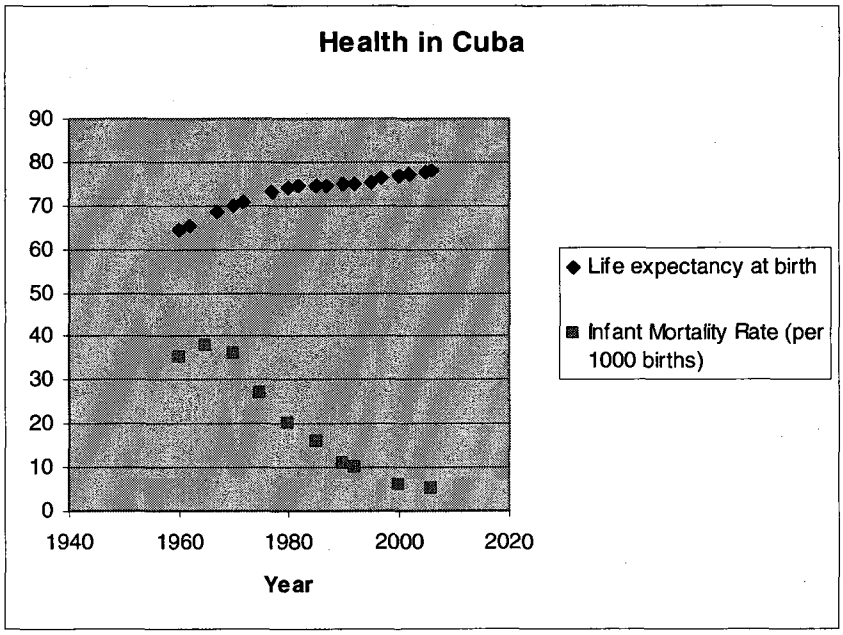
Health must be measured in outcomes. In gross terms, health has improved substantially since 1959, reflecting changes in access to preventative and curative care. In the following section infant mortality and life expectancy will be traced. This will be completed by a discussion of health during the Special Period.

Figures on infant mortality rates do not decrease immediately with the revolution. On the contrary, from 1958 to 1965, infant mortality rates increase. The rates are stable (with minor improvement) from 1966-1968 and deteriorate further in 1969. This initial apparent deterioration may not reflect the health circumstances. It is well established that improved access to health services also improves the quality of health statistics. For instance, while it is estimated that in 1969 98% of all infant deaths were reported, as few as 53% may have been reported in 1956 (Eckstein, 1994). Another possible explanation for the reported worsening of infant mortality is that it took the new government a few years to implement significant changes and these in turn required the passage of some time to take effect (Leyva, 1972). From 1970 onwards, infant mortality rates decrease, reaching rates that are similar to those in OECD countries (see Table 4.1). For example in the most recent statistics available from the World Health Organisation, Cuba's infant mortality rate is reported to be identical to Canada at 5.0 per 1000 births, below the

United States (7.0) and significantly below the average for the Americas (20.7) (WHO, 2009).

Life expectancy on the other hand improves steadily from 1959 onwards (as can be seen in table 4.2. and Figure 4.1). Life expectancy in Cuba can be compared with wealthy and healthy countries globally. The most recent data on life expectancy puts Cuba at 78.5, above Denmark (78.2), and comparable to the United States (79.1), New Zealand (80.1) and Canada (80.6) (UNDP, 2009).

Figure 4.1 Health in Cuba



Source: Tables 4.1 and 4.2

While the severe economic crisis of the early 1990s did not influence life expectancy and infant mortality rates, it did impact health. There was a deterioration of less commonly used health indicators. Average daily caloric consumption dropped by

33% between 1989 and 1993, reaching a low point of 1 800 calories a day (Andaya, 2009; Cooper *et al.,* 2006) (the low cost rations provided 1 200 calories a day during this period) (Diaz-Briquets & Perez-Lopez, 2000). Between 1991 and 1993 there was an outbreak of optic neuropathy that was associated with reduced nutrient intake. Swift recognition of the problem resulted in treatment and the distribution of vitamin supplements, and none of the 50 000 affected people died as a result (Diaz-Briquets & Perez-Lopez, 2000). Special measures were taken to protect children, women and the elderly. Despite this, the number of underweight newborns increased.

In addition, there was a decreased ability to import, which had indirect effects on health. Water quality deteriorated as a result of difficulty procuring products related to the supply of clean water. The shortage of fuel and spare parts also led to a deteriorated garbage collection (impacting general sanitary conditions). Over the counter and prescription medication (particularly for non life-threatening ailments) were in short supply during the Special Period, further affecting the quality of health (Eckstein, 1994). On the other hand there were some unintended beneficial health outcomes, such as increased use of bicycles as a means of transportation (Diaz-Briquets & Perez-Lopez, 2000). The reversal of some trends in health indicators was short lived, and within two years, before the economy recovered, health indicators had reverted to former levels (Cooper *et al.,* 2006).

Government expenditures on health

The change in orientation in the approach to health has been qualitatively described. It is generally agreed that the type of health system adopted by Cuba lends itself to good quality investments (the strong focus on preventative health keeps costs down). In this section the quantity of resources invested in public health will be examined. This will be followed by a discussion of the government's ability to finance health expenditures.

Generally, the amount invested in health has increased. This is true for the net amount, the per capita amount as well as the percentage of total government expenditures allotted to health. While a historic analysis may note these broad increases, they are not the result of gradual annual increases that occurred simultaneously. The variation within each measure will be discussed in the section that follows.

Detailed information about the nature of Cuban government expenditures is available beginning in 1975 in the annual publication of *Anuario Estadistico de Cuba*[34]. In these documents, health expenditure is reported as an aggregate figure including spending in health, social insurance, sports and tourism from 1975 to 1982. However the *Anuario Estadistico de Salud 2009* presents data on total and per capita health expenditures from 1959 to 2009. There is no indication of whether the currency is held constant for a certain year to account for inflation. However as the figures differ slightly

[34] Earlier annual *Anuario Estadistico de Cubas* are published but they do not contain information about government expenditures on health from the late 1960s to the early 1970s. The 1969 and 1974 publications provide no data on health expenditures whatsoever. I was able to locate a microfiche of the 1964 *Boletin Estadistico de Cuba*, which did provide the data for 1962-1964. Unfortunately, only the percentage of total expenditures was readable.

from those reported in the *Anuario Estadistico de Cuba,* it may be assumed that some calculation has been done to make the data comparable[35].

The increase in the size of government expenditures on health can be seen in Table 4.3. Health spending nearly doubled between 1959 and 1960. By 1965 the amount was almost triple that of 1960.[36] The massive increase in resources devoted to health continues until 1990. In 1990-1991 there is a decrease in health expenditure. In 1992 and 1993 health expenditures increased, despite a decrease in the size of total expenditures in 1992. In 1994 there is a slight decrease in health expenditures. From 1995 on, health expenditures return to the trend of annual increases. The health budget mushrooms from 1.2 billion pesos in 1995 to 4.9 billion pesos in 2008 (Ministerio de Salud Pública, 2009).

Health expenditures as a percentage of total expenditures also increased (See table 4.4). From 1975 to 1985 they fluctuated between roughly 2 and 3 % of total expenditures. In 1986 they increased to just under 4% and in 1987 and 1988 they were just under 5%. This decreased to 4.2 % in 1989. The relative size of health expenditures increased substantially in 1990, to 6.5% of total government expenditures. The share of total expenditure allocated to health continued to increase in the 1990s. From 2003 to 2008, 10 to 15% of the government budget was spent on public health (Comité Estatal de Estadísticas, various years).

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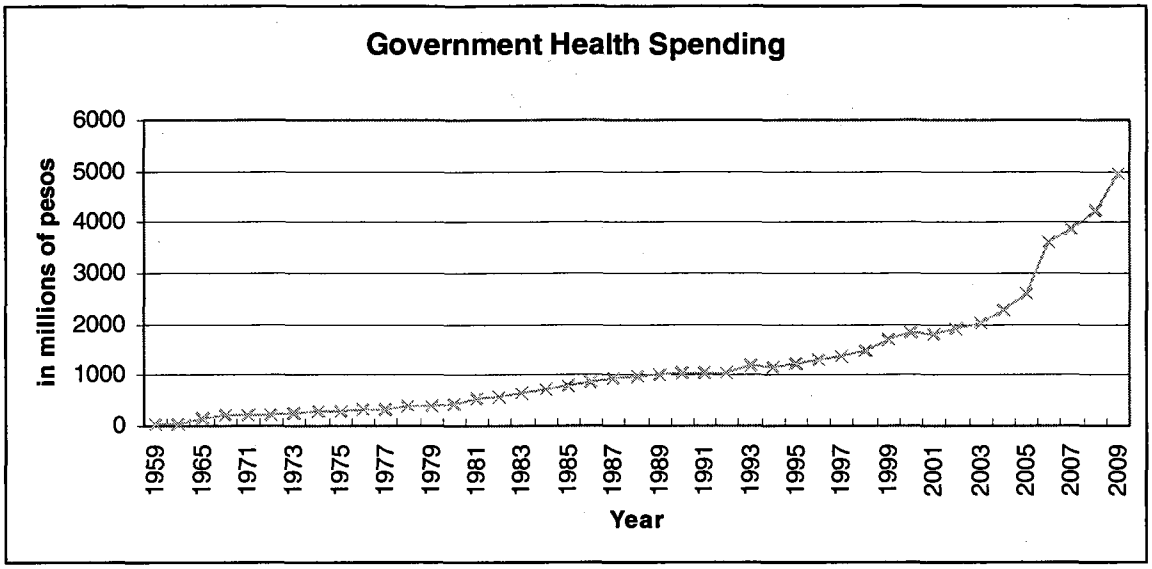
[35] The figures differ but the trends are the same.

[36] The doubling and tripling of expenditure in the early years was possible and easy as the initial sums were modest. Moreover, part of the increased expenditure reflects the government assuming previously private health facilities and thus not a growth in total healthcare facilities and expenditures in Cuba (although this did take place).

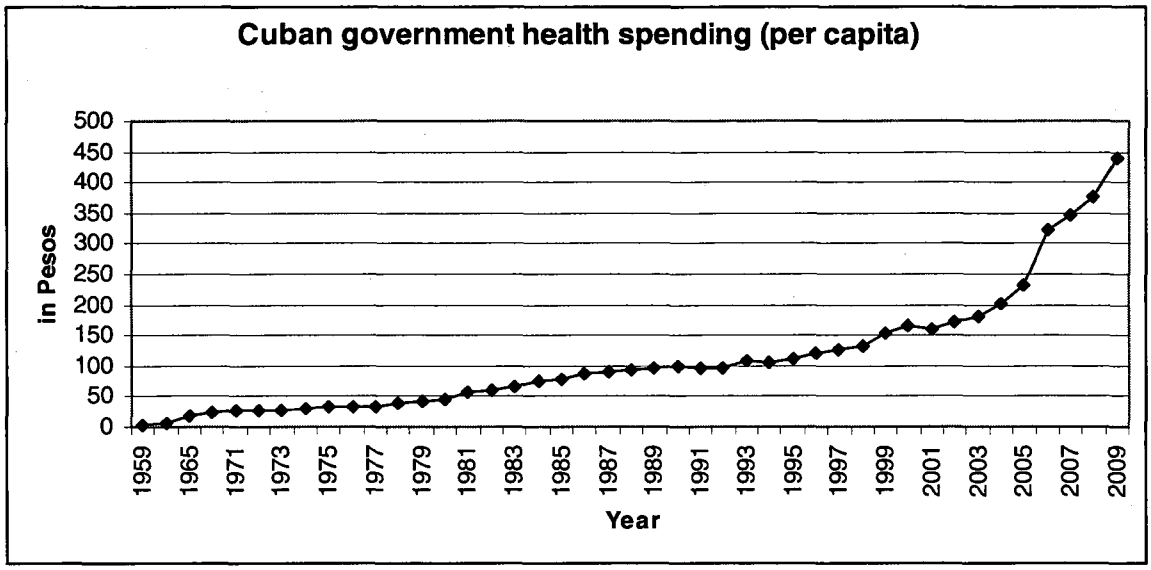
Figure 4.2 Cuban Government Health Spending



Source: Table 4.3

Per capita expenditures in health have also generally increased. The increase can be seen in Table 4.3 and Figure 4.3. Government expenditures in per capita terms increased from 7.3 pesos in 1960, to 25 pesos in 1970, to 45 pesos in 1980, to 98 pesos in 1990, to 165 in 2000 and to 440 pesos in 2009. Despite the general increasing trend, in the 1990s per capita health expenditures fluctuated. In 1991 and 1992, they fell. In 1993 they increased, only to fall again in 1994. From 1996 to 2000 per capita health expenditures continued to increase. In 2001 they fell slightly and their increase has been unabated since (Ministerio de Salud Pública, 2009).

Figure 4.3 Per capita health spending



Source: Table 4.3

Continually increasing health expenditures that occupy a significant share of total expenditures raise the issue of fiscal sustainability. Increases in expenditures do not automatically create fiscal imbalances, as total revenues and expenditures may increase together and other spending areas may have been reduced. Many analysts attribute the government's ability to finance health, among other elements of its numerous social programs, to Soviet aid. Mesa-Lago writes, "The USSR has also largely absorbed the social costs of the Cuban Revolution. Soviet aid has allowed the island to develop its costly programs of social services" (1981: 105). This was indirect however, as the Soviets granted little direct aid to finance social expenditures; in other areas aid freed government resources to be directed towards social expenditures (Eckstein, 1994; Ranis & Kosack, 2004).

Soviet aid came mostly in the form of loans (that had to be repaid) but there were also grants. Thus, examining only Cuban external debt misses part of the fiscal imbalance that was corrected by grants. It is difficult to find figures on the total *aid* received by Cuba. This would provide the best information on fiscal sustainability. However, Zimbalist & Brundenius write that Soviet economic aid was significant, but that on a per capita basis Cuba received less aid from CMEA (Council for Mutual Economic Assistance) than many other Latin American economies received from the West (1989).

Aid took several main forms: the provision of annual credits to finance the Soviet-Cuban trade deficit, direct aid for economic development, military equipment, and price subsidies to imports (mainly of Cuban sugar and nickel) and to the export of Soviet oil (Mesa-Lago, 1981). There is some disagreement about which was the most significant form of aid. Mesa-Lago (1981) maintains that it was credit to finance the trade deficit, while Zimbalist & Brundenius (1989) claim that it was the price subsidy on sugar. This is an important distinction as Zimbalist & Brundenius (1989) make a convincing argument that the sugar subsidy was not as substantial as it initially seems. They report another study that claims Cuban sugar revenue would have been $800 million larger if Cuba had been trading with the United States rather than the USSR (154). Such argumentation diminishes the impact of Soviet aid on the Cuban government's expenditure ability. Mesa-Lago later writes in a similar vein, that the size of the debt accumulated by Cuba was worsened by deteriorating terms of trade with the USSR in the 1980s (1993).

The observation that Soviet aid was less significant than it was previously believed, does not imply that it was insignificant (Mesa-Lago, 1981; Zimbalist & Brundenius, 1989; Mesa-Lago, 1993; Eckstein, 1994). Zimbalist & Brundenius (1994) estimate that total Cuban debt in 1986 was approximately 14.68 billion dollars, while Mesa-Lago (1993) reports that in 1990 it was roughly 17.38 billion dollars. The size of the debt accumulated by Cuba in relation to other countries in the region is disputed. Mesa-Lago (1981) writes that in 1975, Cuba had the third largest foreign debt in all of Latin America and had the highest debt per capita. Similarly he reports that in 1989 Cuba had the highest debt per capita in Latin America (Mesa-Lago, 1993). In contrast, Zimbalist & Brundenius (1989) write that Cuba's per capita debt in 1986 was below that of Panama, Venezuela, Chile, Costa Rica, Argentina, Uruguay and Nicaragua. This confusion arises in part from a refusal by the Cuban government to publish official figures on debt (Mesa-Lago, 1993).

In any case, the ability to finance social programs is unanimously attributed to aid from the Soviet Union. This should be more nuanced. First, in the early years of the revolution, health expenditures increased tremendously, yet this was *before* significant Soviet aid. Mesa-Lago has done a detailed study of Cuban debt and according to his estimations, from 1960 to 1975 the amount of aid (two thirds of which was in loans) received by Cuba increased slowly. From 1976 to 1980, aid increased by 300%, and almost four fifths was in non repayable subsidies. Finally, from 1981 to 1985 total aid continued to rise, but at a much slower rate and most it was in repayable loans (1993).

Since 1992 Cuba has ceased to receive any aid from the Soviet Union, and health spending has increased, not only in the net amount and in per capita terms, but also as a percentage of government expenditures (Vazquez & Valdes, 2007; Mesa-Lago, 1993). Authors who discuss the importance of Soviet aid in financing Cuba's social programs, Cuba's debt and the effect of the economic crisis on Cuba do not write about the fiscal ability of the government to finance health (or other elements of social expenditure) in the post Special Period era (Mesa-Lago, 1993; Eckstein, 1994; Ranis & Kosack, 2004; Prieto, 2004).

The government's ability to finance health since the Special Period is of interest. Table 4.5 shows health expenditures in relation to the size of total expenditures and the government's annual fiscal balance from 1990 to 2005. This allows us to examine the relationship between government expenditures in health and the government's deficit in the post-Soviet era.

Table 4.5 Health expenditures and fiscal health

	Government Budget (In millions of Pesos)		
Year	Health spending	Total spending	Annual deficit
1990	937.4	14213.1	-1958.1
1991	924.9	14713.8	-3764.8
1992	938.3	14131.5	-4869.0
1993	1076.6	14566.5	-5050.6
1994	1061.1	14178.3	-1421.4
1995	1108.3	13808.7	-765.5
1996	1190.3	12813.5	-570.7
1997	1265.2	12662.6	-459.0
1998	1344.9	13061.7	-559.7
1999	NA	NA	NA

2000	1683.8	15587.4	-672.2
2001	1796.6	15771	-737.5
2001	1923.0	17193.2	-996.5
2003	2028.1	18622.4	-1074.0
2004	2089.1	20241.4	-1419.4
2005	3168.8	27156.4	-1945.0

Source: Comité Estatal de Estadísticas, (1996) (1990-1996 data); Comité Estatal de Estadísticas, (1999) (1996-1998 data); Comité Estatal de Estadísticas (2006) (2000-2005 data).

The first observation to be made is that from 1990 to 1994 the total annual deficit incurred by the government is larger than total health spending. Thus, it is impossible to blame health spending *alone* for the deficit.

Second, the 1994-1997 period shows a perplexing trend, where health spending increases, while total spending decreases and the annual deficit decreases. The increasing portion of government spending allotted to health does not contribute to an increasingly problematic fiscal position during this time period.

Third, from 2000 to 2005 the size of health expenditures, total expenditures and deficit increase together. Again, the increase in annual deficit can not be closely linked to health. Between 2004 and 2005 for instance, total government spending increased by 6.9 billion pesos, whereas health expenditures increased by only 1.1 billion pesos and the difference in the deficit for the years was 525 million pesos. Similarly in the 2003-2004 period, health expenditures only increased by 61 million pesos, while total government expenditures increased by 1.6 billion pesos and the difference in fiscal deficit was 345 million pesos.

Finally, considering the trend for the entire period in the Table, there is a large increase in total health spending that coincides with large increases in total spending,

while the difference in the size of the annual deficit incurred by the government in 1990 and 2005 is negligible (the deficit was 13 million pesos larger in 1990). Thus Table 4.5 demonstrates that in the post-Soviet era, health expenditures can not be directly linked to fiscal difficulties encountered by the Cuban government.

The economy

In Human Development literature the growth of the economy is supposed to be very important in indicating the fiscal ability of governments to invest in human development. We concern ourselves more with the size of the economy, as measured by income per capita. Annual economic information is outlined in Tables 4.6 and 4.7. Two tables are used as the data is drawn from two different sources and uses different base years for the currency. The most important observation is that the health revolution began and was maintained during relatively low levels of economic activity (income per capita).

As explained briefly above, Cuba's economy prior to the revolution was highly dependent on sugar exports and as these went mainly to the United States, on trade with the United States. The trade embargo that the United States placed on Cuba following the revolution placed Cuba in a difficult economic position. Economic relations with the Soviet Union and Eastern Europe soon filled the vacuum and Cuba continued to rely heavily on sugar exports. In 1958, the per capita income in 1980 $US was 866. During the 1960s, the economy did not perform impressively, reflecting the change in trading partners. Income per capita fluctuated. In 1971, per capita income was below the 1958 level, at 1980 $US 846 (Brundenius, 1984). It should be noted that distribution of the

income per capita was better than prior to the revolution, and living standards had improved, if per capita income had not (Mesa-Lago, 1981; Diaz-Briquets, 1983).

Between 1975 and 1978, the economy boomed, recording annual growth rates of over 5 % and even reaching 9.5% (UNSTATS, 2010). Growth continued in the early 1980s. Towards the mid-1980s, economic activity was stagnating (UNSTATS, 2010; Mesa-Lago, 1993). The economy plummeted into a severe recession with the disintegration of the Soviet Union and the ensuing cessation of trade with its major trading partner, combined with the continued trade embargo from the United States. Between 1989 and 1993, the size of the economy decreased by more than 30%! (Diaz-Briquets & Perez-Lopez, 2005). This period was named the Special Period (*Período Especial en Tiempo de Guerra*) by then-president Fidel Castro. In 1994 the annual deterioration ended and slow growth started.

In the year 2000 per capita income surpassed the 1988 level for the first time. From 2003 to 2008 there was relatively high growth, averaging over 7% annual growth during the period (UNSTATS, 2010). The Cuban economic experience has thus been heterogeneous, with periods of significant growth, stagnation and regression. In 2008, its per capita income was US$5,596, placing it in the World Bank's upper middle income classification, which it graduated to in 2006 (for countries with per capita incomes ranging from US$3,856 to US$11,905) (World Bank, 2010; UNSTATS, 2010).

Discussion and analysis of the data

We are now sufficiently armed to turn to the main query of this work, that is, does health require continued economic growth, or can it be achieved and maintained at certain levels of economic activity? A historical review of Cuba's economy demonstrates that it has not stagnated, but in fact has had periods of high economic growth. The reader may question the relevance of turning to Cuba in this case to reflect upon the original problematic. Let it be re-stated that it is the levels of health in relation to the levels of economic activity that trigger interest in the study of Cuba.

In this section, we examine the overarching links between economic growth and health outcomes. Within this relationship fiscal sustainability will be addressed, after which the discussion turns to the more central query of health outcomes and levels of economic activity. To accomplish this, the relationship between health outcomes and government investments in health will be examined.

Continued improvements in health are observed over time regardless of economic trends. The exception to this occurs in the 1960s when the economy stagnated and infant mortality rates increased. Reasons for the worsening of infant mortality have already been discussed. Otherwise, during periods of growth, stagnation and regression, Cuban health, as measured by infant mortality and life expectancy, has continually improved.

Human Development scholars have questioned the fiscal sustainability of continued government expenditures without economic growth. Most analysts who write about Cuba's human development place it in a virtuous development cycle, where it benefits from economic growth and human development improvements (Ranis &

Kosack, 2004; Ghai, 2000; Brundenius, 1984). Typically, financing human development is not perceived as problematic for a state in this situation. Thus during the periods of growth in the 1970s, 1980s and since 2000, spending on social services would not be perceived as problematic. However there is unanimous accord in the literature that during the 1970s and 1980s, the ability of the Cuban government to devote as many resources as it did to health was highly dependent on aid received from the Soviet Union. This implies that it would have been fiscally unsustainable to do without the Soviet Union, despite economic growth.

In the 1960s on the other hand, when the economy was stagnating, there was an increase in government health expenditures. Human development scholars would expect fiscal difficulties during this period. Prior to the collapse of the Soviet Union Cuba did not publish information concerning public debt, making it difficult to establish a link between human development expenditures and debt. It is known that relations with the Soviet Bloc were slow to start, and thus in the early 1960s, Cuba did not receive substantial aid – even as it expanded its expenditures.

During the Special Period, the government's ability to finance health was certainly constrained by the massive economic recession. This explains the fluctuation that is seen in both net and per capita health expenditures from 1989 to 1994. The large majority of spending cuts occurred outside of social services, allowing both per capita and net expenditures to increase from 1989 to 1993. In 1989 per capita government expenditures on health were 96.6 pesos and in 1993 they had increased to 107.6. Similarly, net expenditures on health increased from 1015.6 million pesos to 1174.9

million pesos (Ministerio de Salud Pública, 2009). The increase is impressive considering the scale of the economic crisis. However, health spending was constrained and plans to build new hospitals were postponed (Mesa-Lago, 1993). It would be difficult to link health expenditures during this time period to fiscal difficulties simply due to the scale of the economic setback.

The lack of a close link between economic growth and health outcomes, and economic growth and fiscal sustainability diminishes the importance of economic growth. The discussion until now has been carried out on Human Development scholars' terms, centering on economic growth. However, it was noted earlier that it is of interest to look at health outcomes and fiscal sustainability at different levels of economic activity, as this is more compatible with eventually limited economic growth.

In general terms, Cuba shows that health can be achieved and maintained at relatively low levels of economic activity. It is only in 2006 that Cuba enters the World Bank's upper-middle income classification. The bulk of its achievements in health were achieved before this, when Cuba had relatively low levels of economic activity.

One of the implications of eventually limited economic growth is that economies will have to operate at stable levels that are not growing. To determine whether it is possible to pursue health under such conditions, it is important to look at the size of health expenditures and their relation to health outcomes. Of course, merely increasing government expenditures is not enough to ensure good or improving health outcomes. Can increases in health expenditure remain 'good quality' health expenditures that

contribute proportionately to improvements in health – or can per capita health expenditures be levelled off at a certain point with no negative effects on health?

In Cuba health expenditures have increased enormously since 1960. The entirety of this increase has been impressive, but as Figures 4.2 and 4.3 show there has been a massive increase in recent years. The reason for the increasing health expenditures may not be that health is assuming a status of increasingly high priority, but that for continued improvements in health, increasing amounts need to be spent.

Healthcare costs in Cuba are high as people are now dying from heart failures and cancer, which require costly treatment and in-hospital care (Eckstein, 1994). In 1983, one high-tech hospital alone consumed 10% of the annual health budget (Eckstein, 1994). As early as 1990 it was noted that Cuba faced health challenges that resembled those faced in rich countries: a shortage of nursing homes, a shortage of schools for the disabled, the need for more sophisticated health education, the generation of new prevention strategies geared towards adolescents, cost-benefit decisions to be made when investing in high tech research and services, and the problems of chronic degenerative and lifestyle diseases (Santana, 1990).

Some of these challenges are the result of an aging population in Cuba. The aging of the population has increased in pace since the 1990s. In 1953 6.9% of the population was elderly, in 1970 9.1% was and by 1998 this ratio had increased to 13.6% (Gondar & Negrin, 2000). Cuba figures among the top ten countries for the largest estimated percentage of elderly in the 2050 and also the largest increase in the relative size of the elderly population between 2000 and 2050 (Bloom *et al.,* 2010). Cuban scholars write

that this is an issue that needs to be addressed by public policy and is likely to place a large burden on society. The majority of this burden is believed to lie in the costs of social security (not health expenditures, although these too are believed to be an issue) (Diaz-Briquets, 2002; Gondar *et al.,* 2000). Donate-Armada (2001) makes estimations of an increasing cost of age-related morbidity in Cuba, but cautions that the projections are not accurate.

The increasing per capita spending in healthcare observed in Cuba is the result, to use economists' parlance, of having already picked the low-lying fruit. The cheap and highly effective avenues to dramatically increase health have been pursued, and now there are diminishing marginal returns to health expenditures. Indeed, Santana (1990) writes that it is now time for the government to consider whether increasing investments in health are likely to yield as high returns on health as investments in other sectors, such as housing and transportation.

This observation is linked to the general question about eventually limited per capita government expenditures in health. Using life expectancy and infant mortality as indicators of general health in Cuba, it can be concluded that Cubans have good health. Comparisons with other countries, such as Canada and the United States, show that it has very similar health outcomes despite being at a significantly lower level of economic activity. Indeed these indicators rank Cuba as one of the healthiest countries in the world. The World Health Organisation provides figures on per capita government expenditures on health in per capita PPP international dollars. It shows that Cuba spends significantly less than rich and healthy countries. For instance in 2000, Cuba spent PPP$353,

compared to PPP$ 1770 in Canada and PPP$ 1333 in New Zealand. In 2006, the trend is the same: Cuba spends PPP$ 674 whereas Canada and New Zealand spend PPP$ 2587 and PPP$ 1906 respectively. This data suggests that continually increasing Cuban government expenditures in health at this point may bring about some health returns, but they will be relatively small.

In addition to showing that Cuba spends less compared to healthy and wealthy countries, the figures from 2000 and 2006 show that Cuba's per capita health spending has increased enormously. Health outcomes on the other hand have not increased proportionately. The infant mortality rate fell from 6 to 5 between 2000 and 2006. Similarly, life expectancy increased from 76.8 to 78 years in the same time period. These are slow improvements in health compared to the massive increased investment reported above.

There are limits to the amount that life can be expanded and infant mortality can be reduced. An infinite amount of resources could be invested in health in attempts to prolong and improve the quality of life without infinitely improving them. Hypothetically, were Cuba to continue to invest roughly the same amount of resources per capita into health (in real terms), in the same way that it is currently doing, the health of its population would remain high. It could do this at varied levels of economic activity (depending on tradeoffs between investments in other sectors). Some levels of economic activity would generate enough revenue for the government to maintain its per capita expenditures in health in a fiscally sustainable manner. It would also seem possible that

if the population remained the same size, endless economic growth would not be necessary to finance the health expenditures.

Conclusion

Cuba captures the attention of development scholars for many reasons. Each of the sections in this chapter is of interest in development – how the health system is set up; the results achieved; government investment in health; how this spending relates to fiscal balances; and finally the particular economic setting in which it all occurred. The weathering of health indicators during the Special Period and the continuation of the Cuban model without help from the Soviet Union are intrinsically important in development studies.

However, this analysis does not focus on Cuba to learn about the Cuban particularities, but rather to see what light the Cuban experience can shed on the discussion of the pursuit of health at stabilised levels of economic activity. While the Cuban economy has not stabilised, it still provides an interesting setting, as most of the health achievements were attained during relatively low levels of economic activity.

Health in Cuba has traditionally been pursued at very low costs and this is primarily due to their health system, which is based on preventative and primary healthcare. However, it is clear that the government is constantly spending more in health. Per capita health expenditures continually increase.

Were health outcomes to increase proportionally, it would indicate that a population's health outcomes benefit from continually increased financial resources.

Such a finding would suggest that government resources need to be expanded to be able to increase this funding, possibly implying the need for economic growth to do so.

Health outcomes in Cuba, as measured by infant mortality rate and life expectancy, rival the top health outcomes in the world. As such there is little space for improvement and the cost of doing so becomes more expensive as health improves. It is reasonable to conclude that were Cuba to continue investing the same amount of resources per capita in health in real terms, and were it to maintain the current quality of these expenditures, health outcomes would continue to be high. This suggests that per capita government health expenditures in Cuba can be limited without negative consequences on health outcomes. This in turn would decrease the need for economic growth to finance health expenditures. In reality however, per capita spending is increasing in Cuba and the economy is growing. Thus we are reduced to speculation about the possibility of the pursuit of health at stabilised levels of economic activity.

Tables:

Table 4.1 Infant Mortality Rate

Infant mortality rate (IMR) per 1000 births	
Year	IMR
1960	35
1965	38
1970	36
1975	27
1980	20
1985	16
1990	11
1992	10
2000	6
2006	5

Source: Data is from Eckstein (1984), with the exception of the years 2000 and 2006 which are from WHO (2009).

Table 4.2 Life expectancy

Life expectancy at birth	
Year	Life expectancy
1960	64.2
1962	65.4
1967	68.6
1970	70
1972	71
1977	73.1
1980	73.8
1982	74.3
1985	74.5
1987	74.6
1990	74.7
1992	74.8
1995	75.6
1997	76.2
2000	76.8
2002	77.1
2005	77.8
2006	78

Source: Data is from the World Bank (2009)

Table 4.3 Cuban Government Expenditures on Health

	Government Health Spending (in pesos)	
Year	Total	Per capita
1959	25,690,200	3.72
1960	51,279,900	7.3
1965	148,878,200	19.07
1970	216,443,200	25.25
1971	224,489,300	25.89
1972	232,535,600	26.33
1973	240,582,100	26.72
1974	281,313,200	30.73
1975	304,154,500	32.73
1976	323,783,700	34.19
1977	322,107,300	33.58
1978	390,827,800	40.32
1979	409,255,600	41.87
1980	440,174,800	45.01
1981	558,931,100	57.29
1982	594,691,500	60.6
1983	668,080,300	67.62
1984	740,484,500	74.4
1985	794,267,800	78.97
1986	875,217,200	85.88
1987	922,214,400	89.67
1988	978,927,900	94.08
1989	1,015,625,500	96.66
1990	1,045,094,100	98.56
1991	1,038,484,500	97.11
1992	1,038,797,300	95.99
1993	1,174,927,800	107.57
1994	1,166,386,200	106.42
1995	1,221,960,600	111.31
1996	1,310,078,500	119.03
1997	1,382,951,000	125.31
1998	1,473,090,300	132.44
1999	1,710,638,700	153.52
2000	1,857,035,500	165.99
2001	1,796,598,700	159.99
2002	1,923,032,100	170.92
2003	2,028,100,000	180.26

2004	2,269,380,300	201.99
2005	2,596,300,000	230.64
2006	3,629,000,000	321.79
2007	3,881,626,100	345.37
2008	4,230,938,600	376.44
2009	4,948,220,141	440.3

Source: Ministerio de Salud Pública

Table 4.4 Government health spending

Year	As a % of total spending
1975	2
1976	Na
1977	2
1978	2.4
1979	2.3
1980	2.1
1981	2.2
1982	3.4
1983	2.2
1984	2.3
1985	2.7
1986	3.8
1987	4.9
1988	4.9
1989	4.2
1990	6.6
1991	6.3
1992	6.6
1993	7.4
1994	7.5
1995	8.0
1996	9.3
1997	10
1998	10.3
1999	Na
2000	10.8
2001	11.4

2002	11.2
2003	10.89
2004	10.3
2005	11.7
2006	11.2
2007	14.5
2008	15.54

Source: Comité Estatal de Estadísticas, various years.

Table 4.6 Levels of Economic activity

Year	GDP/capita (1980 $US)
1958	866
1959	891
1960	887
1961	909
1962	882
1963	877
1964	936
1965	921
1966	883
1967	885
1968	924
1969	884
1970	867
1971	847
1972	901
1973	996
1974	1,065
1975	1,158
1976	1,236
1977	1,329
1978	1,395
1979	1,417
1980	1,455
1981	1,579

Source: Data is from Brundenius (1984, 39). US$1=0.71 pesos.

Table 4.7 Levels of economic activity and economic growth

Year	GDP % growth	GDP /capita ($ US)

1970		653
1971	8.60%	780
1972	4.80%	901
1973	3.40%	1,088
1974	1%	1,224
1975	9.50%	1,380
1976	5.40%	1,445
1977	8.70%	1,474
1978	6.60%	1,837
1979	1.10%	2,003
1980	-4.80%	2,025
1981	19.70%	2,039
1982	8.90%	2,111
1983	5.40%	2,228
1984	7.90%	2,400
1985	1.60%	2,273
1986	0.10%	2,382
1987	-2.40%	2,455
1988	3.70%	2,645
1989	0.70%	2,576
1990	-2.90%	2,706
1991	-10.70%	2,279
1992	-11.60%	2,056
1993	-14.90%	2,070
1994	0.70%	2,620
1995	2.50%	2,789
1996	7.80%	2,284
1997	2.80%	2,307
1998	0.20%	2,334
1999	6.20%	2,565
2000	5.90%	2,757
2001	3.20%	2,851
2002	1.40%	3,016
2003	3.80%	3,217
2004	5.80%	3,417
2005	11.20%	3,810
2006	12.10%	4,709
2007	7.30%	5,230

2008	4.30%	5,596

Source: World Bank (2009)

Chapter 5:

Kerala: Health Inputs, Outcomes and Sustainability

The peculiarities of Kerala's health outcomes have fuelled debates within Kerala and internationally. In this chapter longitudinal data will be presented and analysed with the purpose of addressing some of the debates that are raised around Kerala as they impact the issue of health as related to limited levels of economic activity. To contextualise the government's expenditures in the area of health, and to highlight their qualitative importance, the chapter will begin with a brief overview of health before Kerala was constituted as a state within an independent India. This will be followed by a description of the health system's evolution in Kerala. The government's health expenditures and fiscal (im)balances will be examined. A concise review of the economy will be the final element that will allow us to consider the different implications of economic growth and economic activity on health outcomes in Kerala.

Health before the formation of Kerala

Kerala has a long history of traditional medicine, which continues to be strong today. 'Modern' medicine can also be traced back for more than a century in the state. As with other aspects of development, the area encompassed in modern Kerala had different levels of health and access to health care before the state was formed. Those residing in Malabar fared worse not only in education, land ownership and access to clean water as

described in chapter 3, but also (not surprisingly) in health. Travancore and Cochin had relatively advanced systems of health for places in the developing world during that time.

The origins of western health care in Travancore began with Christian missionaries, who attracted the local population by offering health and education services (Sadanandan, 2001). Preventative medicine began to be practiced in Travancore in 1865 with the establishment of a vaccination department (Nair, 1994). By 1879 vaccination was compulsory in Tranvancore and Cochin for all public servants, prisoners and students. In the late 1920s measures were also taken to control hookworm and filariasis (Kutty, 2000). In Travancore and Cochin, the state considered the provision and promotion of health to be a duty of the state. From the 1890s onwards, Tranvancore and Cochin spent 3-8% of their total government budgets on public health (Ramachandran, 2000). In the first half of the twentieth century, plague, cholera and smallpox were the dominant health hazards, and the incidence of these had been significantly decreased by the 1940s. Malaria was also controlled in the late 1940s in Tranvancore and Cochin (Panikar, 1979). Public health education was promoted since the 1930s (Sibbons, 1992). The only medical college prior to the formation of Kerala was in Travancore and Cochin, established in 1951 (Aravinidan, 2007). One indication of the diverging access to health on the eve of Kerala's formation is the number of hospital beds per 100 000 people in each area. Travancore and Cochin had 76 beds compared to only 34 beds in Malabar (Sadanandan, 2001).

Kerala's approach to health

When Kerala became a state, the approach to health adopted in Travancore and Cochin was expanded to Malabar as well. The newly elected communist party considered the provision and promotion of health an 'urgent need' and health care was declared a right (State Planning Board, 1968: 84). The initial focus in health was to expand the existing facilities and services to Malabar to reduce inter-state health disparities. This was largely achieved by 1976 (Sen, 1996; Ramachandran, 1996).

The constructed health system has three tiers: primary and community health centres, district hospitals and medical colleges. All are distributed evenly throughout Kerala (Varman & Kappiarath, 2008). Modern medicine is the primary system of treatment; however, ayurveda, homeopathy, sidha, unani and naturopathy are also available.

Programmes were launched to address the provision of health, including Maternity and Child Health, Control of Communicable Diseases, Family Planning, Environmental Hygiene and Health Education (State Planning Board, 1968). The Family Planning program, later referred to as Family Welfare, aimed at reducing the size of the average family, which with time became part of a comprehensive policy covering education, health, maternity, childcare and nutrition (State Planning Board, 1979).

Another priority was the training of medical health professionals. Schools funded by the central and state governments were founded with the aim of producing graduates to serve rural communities (Kutty, 2006).[37]

[37] This was not entirely successful (and remains an ongoing problem) as many of the publically trained health professionals were absorbed by the private health sector, which will be described shortly.

An early aim of health spending was to increase physical access to health centres, and this was achieved by major investment in infrastructure from 1961 to 1986 (George & Nair, 2004; Kutty, 2000). From the formation of the state to the mid 1970s, the most systematic measure for health used by the government in its *Kerala; An Economic Review* annual publications, is the number of beds and the number of health institutions. These are noted each year with great detail and with great pride as the numbers for both increase. For the first time in the 1979 edition, it is explicitly recognised that merely increasing the number of hospital beds and the number of hospitals and primary health centres is not enough to guarantee good health. A year earlier, it was recognised that while the number of beds was increasing, there was scope for improvement in the "quality and efficacy" of the health system (State Planning Board, 1978, 95). A High Power Committee was appointed to investigate the matter. In the following years a few of the recommendations made are initiated. For instance, paediatricians are posted in Primary Health Centres and laboratory services also begin to be offered at that level (State Planning Board, various years).

Another visible trend in the *Kerala; An Economic Review* publications is the state's quasi equation of amount spent on healthcare and infrastructure with health outcomes. Kerala's per capita spending is almost annually compared with the All-Indian State average and with other individual states. It consistently spent above the national average and this was more important in the reports than the quality of the spending or the health outcomes it generated. For instance, while in 1970 it is proudly pointed out that Kerala spends Rs. 6.96 per capita on health compared to the Indian average of Rs. 5.16,

when the Indian average had increased to Rs. 7.9 in 1973, Kerala proudly reported spending more (Rs. 9.87) (State Planning Board, various years).

The healthcare system began in Kerala as a public system. In 1969 the first co-operative hospital was founded. This was an early move away from an entirely public system. In 1972-73, the government started a pilot project to build co-operative dispensaries through the Special Employment Scheme. The goal was twofold: to supply needed modern medical facilities for 450 *panchayats*,[38] and to employ 500 unemployed medical graduates. Cooperatives are partly financed by the government, which also supplies the equipment (Nambiar & Suchethakumari, 2002). This initiative helped to extend medical facilities to every *panchayat* of the state (State Planning Board, 1976). Today, more than 96% of villages in Kerala have a primary health centre, clinic or hospital. Only 9% of villages are located further than 10 kilometres away from a hospital (Micheal & Singh, 2003).

Since the mid 1970s a private healthcare system has grown alongside the public system and has increased in importance. It is now a more important provider of *curative* healthcare services than the government, servicing more than two thirds of the total curative healthcare (Government of Kerala, 2006). Most of the provision of health services in rural Kerala is private (Sandanandan, 2001). The rise of a private healthcare system occurred in conjunction with rising individual incomes, which were the result of remittances (mostly from migrant workers around the Persian Gulf). It is in the mid 1970s that remittances from migrant workers become significant in Kerala (Government of Kerala, 2006). This increased income combined with higher levels of education and

[38] This is a local level of governance at the district (sub-state) level.

health expectations of the population led to an increase in demand for health care, creating a market for private health care.

A survey conducted in 1987 on 10 000 households found that only 23% of the respondents regularly used government health services. Even for the poorest stratum, only 33% used public institutions regularly (in Kutty, 2000, 105).[39] This relatively poor usage of the public system is documented by others (Ekbal, 2007; Varatharajan, 2004; Kunhikannan & Aravindan, 2000). Reasons for not using public institutions include: insufficient drugs and inadequate attention (Kutty, 2000). The government actively promoted the privatisation of health care, citing a lack of funds (Kunhikannan & Aravindan, 1996). The relationship between the private health care system and government finances will be explored in greater detail later in this chapter.

It is clear, however, that the public sector paved the way for the rise of the private sector by massive sensitization campaigns (Kutty, 2000). Moreover, the public health sector still dominates in *preventative* health care. Primary Health Centres, the basis of the public health system, are mostly envisioned to carry out preventative medicine and are widely used in this function (Kunhikannan & Aravindan, 2000). For instance, 99% of expectant mothers get an antenatal check-up and 84% of children get all their immunisations (Government of Kerala, 2006). These are preventative services offered by the state that have lasting health benefits.

Despite a dominant private sector, public health institutions continue to be important, especially for those of lower income. About 80% of patients in public

[39] This refers to those who 'regularly' seek healthcare services. The insight gained from these two figures is limited but does illustrate the relative importance of the private and public health sectors in Kerala.

hospitals are of low socioeconomic status. In private hospitals, this ratio is only 44% and in cooperatives it is 58% (Nambiar & Suchethakumari, 2002). In public hospitals low income families (only) continue to receive services free of charge (Kutty, 2000; Levesque *et al.*, 2007). Otherwise, it is also normal to pay for services in the public sector. The average expense incurred during the delivery of a baby in a public hospital, for instance is Rs 2025. While in principle this should be free, a lack of supplies, corruption and the internal privatisation of public health are explanatory factors for the cost, which remains below the average cost in private hospitals (Rs 2870) (Kunhikannan & Aravindan, 2000).

The privatisation of healthcare raises questions about the continuation of the Kerala model of health, which is recognised internationally for its low cost, universal accessibility and availability to the poor sections of society. The prohibitive price of private health care means that the poor are disadvantaged, as the quality of the infrastructure and equipment tends to be poorer in the public sector. Moreover, more lucrative salaries in the private sector attract highly skilled physicians, leaving poorer quality human resources in the public sector. Ekbal writes darkly "health is no more seen as a right, but as a commodity to be purchased by money" (2007, 282-283).

Indeed, between 1987 and 1996, household expenditure on health increased by four times, accounting for inflation. The increase was proportionally greater for the poor than for the rich (Thankappan, 2001). It is generally agreed that the poor spend approximately forty percent of their income on healthcare (Kunhikannan & Aravindan, 2000; Vaaratharajan, 2004)![40]

[40] This is a staggering figure and refers to their cash income only. It is important to recall that the poor do not meet all of their needs through personal cash expenditures and are beneficiaries of numerous social

Since the beginning of the 21st century, the government has made serious efforts to revamp the public health system, recognising the problems associated with private health care. It has extended a national health insurance scheme (Rashtriya Swastha Bima Yojana) for workers who fall below the poverty line (BPL). The national scheme targets approximately 1.2 million families, whereas the Comprehensive Health Insurance Scheme (CHIS) envisioned by the state government targets more than double – three million families, or an estimated 15 million people (making it one of the largest publically funded health insurance schemes in the world). Under the CHIS, families can incur expenses of up to Rs. 30,000 per year for free after having paid a token Rs. 30 registration fee (State Planning Board, 2008 and 2009).

The 73rd and 74th amendments to the Indian Constitution in the 1993 encouraged and facilitated decentralisation throughout India. Although adopted in Kerala, it was only in 1996 that serious efforts were made to decentralise. In the health sector, all institutions other than medical colleges and regional specialty hospitals were placed under the control of local governments. Funds have also been decentralised, thus realising a true transfer of power to the local governments. The results in the health sector have been good, with improvements in the outreach of health services and in health infrastructure (Kutty, 2007; Government of Kerala, 2006; Kunhikannan & Aravindan, 2000).

Combining the public and private sectors, the number of health institutions and beds in Kerala is quite high compared to the rest of India. In the government sector alone the numbers are impressive. In 1957-58, there were a total of 369 medical institutions

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programs led by the state (i.e. the public distribution system, social security, housing, education, etc.). Neither article cited provides a breakdown of what the remainder of their cash income is spent on, although this would be of interest.

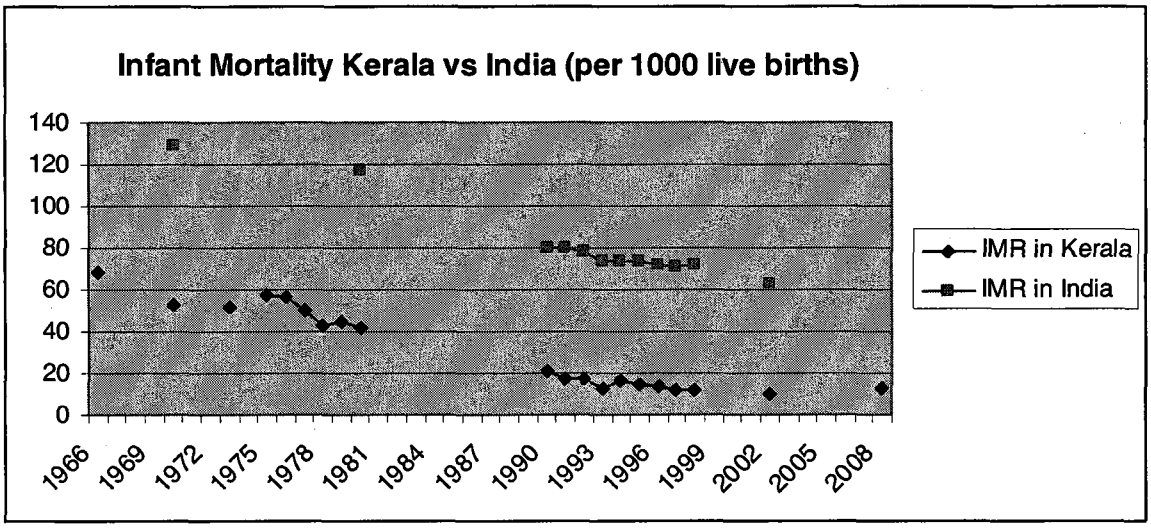
with a total of 11,959 beds. By 2008, this had increased to 6,391 medical institutions with 31,903 beds. The most up-to-date information concerning the private sector dates back to 1995 and traces 12,328 institutions with 70,506 beds (State Planning Board, various years). The number of physicians in Kerala is also high. However, there is an insufficient number of mid-level health professionals, such as nurses, paramedics and technicians (Kutty, 2006).

Health outcomes

Kerala has earned international recognition for the 'Kerala Model of Health', which produced significant improvements in health reflecting the better access to preventative and curative care. Figures to demonstrate this for life expectancy and infant mortality will be used. However, it would be an oversimplification to present health in Kerala as such. In order to provide a clearer picture, a brief discussion of morbidity and mental health will also be included.

The infant mortality rate has consistently fallen (See table 5.1 and Figure 5.1). It dropped from 120 per 1000 live births in 1951-1961 to 13 in 2008. In the 1990s, the decline came to a standstill and the rate hovered around 14-15. There are no significant differences between rural and urban infant mortality (State Planning Board, various years).

Figure 5.1 Infant Mortality



Data from table 5.1

Life expectancy figures show similar trends, showing improvements in health (See Table 5.2). Between 1951 and 1960, women had a life expectancy at birth of 50 years, while men had one of 46 years. By 1968, both men and women's life expectancies had been prolonged by 10 years. In 1976 the average life expectancy was 62 years for men and women and in 2008 this had increased to roughly 74 years. Again, there are no significant differences between rural and urban figures (State Planning Board, various years).

Life expectancy and infant mortality are indicators of mortality and both show significant improvements in the quantity of life lived, and place Kerala ahead of the average Indian state. These achievements deserve the recognition that they have received. However, a 1973-74 National Survey reported a startling discovery: that Kerala had one of the highest rates of morbidity in all of India (Government of Kerala, 2006). Later

studies came up with the same result (Panikar & Soman, 1984; Kannan *et al.,* 1990). Keralites according to these studies suffered from high rates of infectious and chronic disease. This sparked a lively debate to understand the findings. Some argued that high morbidity in Kerala reflected higher rates of reporting. Due to their superior health and education status, people living in Kerala were more likely to seek treatment than in other states, or than previously in Kerala, thus explaining the high morbidity rates (Panikar & Soman, 1984). Morbidity is difficult to compare accurately throughout time and space. Regardless, high morbidity is a problem that continues to plague Kerala today (State Planning Board, 2009; Government of Kerala, 2006). It is important to contextualise it, however. For instance, Kerala has a relatively high prevalence rate of tuberculosis (higher than many other states), but this is combined with a relatively low level of fatality from tuberculosis (Government of Kerala, 2006). This example is indicative of another trend, whereby diseases that used to kill have been transformed into chronic illness due to improvements in treatment but for which a cure remains elusive. HIV/AIDS and various forms of cancer also follow this pattern. The cost of healthcare increases as a result of the improvements.

Chronic and lifestyle-related diseases are on the rise in Kerala. Hypertension, diabetes and coronary disease are becoming more common. This is sometimes referred to as the fourth stage of health transition, which is related to longer life expectancy and changing lifestyles (Das, 2007).

Mental health is another issue of concern in the state. Kerala has a disturbingly high rate of suicides. Its rate, which is almost three times the national average, places it

higher than all other Indian states (Halliburton, 1998). For our purposes it is sufficient to know that the government is concerned by it and is trying to address the underlying problems (Government of Kerala, 2006; State Planning Board, 2008).[41]

In the 1990s, scholars began to question whether the Kerala model of health could continue, and whether it was a model at all, due to the morbidity paradox. However, nothing can discredit the real advances that have been made in mortality, as indicated by life expectancy and infant mortality. These are advances that are shared all Keralites and point to real improvements in health.

Government expenditure and fiscal sustainability

There has been a considerable amount of debate about the government's ability to maintain its health expenditures over time. The fodder that has fuelled this interrogation is twofold: the emergence of a vibrant private sector health system and the severe fiscal problems that the state encountered. Arguments from scholars in relation to each will be addressed. However, before doing so, the figures themselves will be presented.

Information about government spending in health can be found in *Kerala, An Economic Review* and the later version, *Economic Review, Kerala*. The publications ranging from 1959 to 1981 only provide data on per capita expenditure on health and sometimes the net expenditure on health. There is no information about the total size of government expenditures, nor of expenditure on health in relation to the State Domestic Product (SDP) (although this could be calculated). Over this time period some

[41] The high suicide rate is believed to be linked to the increase in education and abilities that has not been mirrored in opportunities in the local economy. Other factors believed to affect the rate are social and cultural change (for instance the increase in satellite television) (Halliburton, 1998).

publications provide no information whatsoever about per capita expenditures, providing only the net expenditure. Starting in 1980 expenditure on health is presented in a new format, which continued into the 21st century. Health expenditures are divided into Plan and Non-Plan expenditures. Plan expenditures are those supported through grants from the Indian government and generally are allocated to centrally planned health schemes, such as disease control. Another change takes place in 1986 where data on health expenditures is presented with and without Family Welfare expenditures[42]. In the 2008 and 2009 versions, the expenditure on health is presented in yet another different format, dividing it by type of health care (allopathy, ayarveda and homeopathy) without any mention of Family Welfare. The per capita government spending figures seem to include Family Welfare from the beginning and are the most consistent figures available.[43]

The net size of government expenditures has increased annually in Kerala[44]. This is apparent in Figure 5.2.

Table 5.4 traces per capita government spending in health. It can be seen that this has increased substantially over the years, from under five Rupees in 1965-66 to over 270 in 2002-2003. George draws attention to the fact that rates of growth in real per capita expenditure are dropping (1999). However, falling rates of growth are still *increases* in government health expenditure. Glancing at figure 5.3 one can note that the exceptions are in 2000-2001 and again in 2002-2003, when per capita expenditure in health fell.

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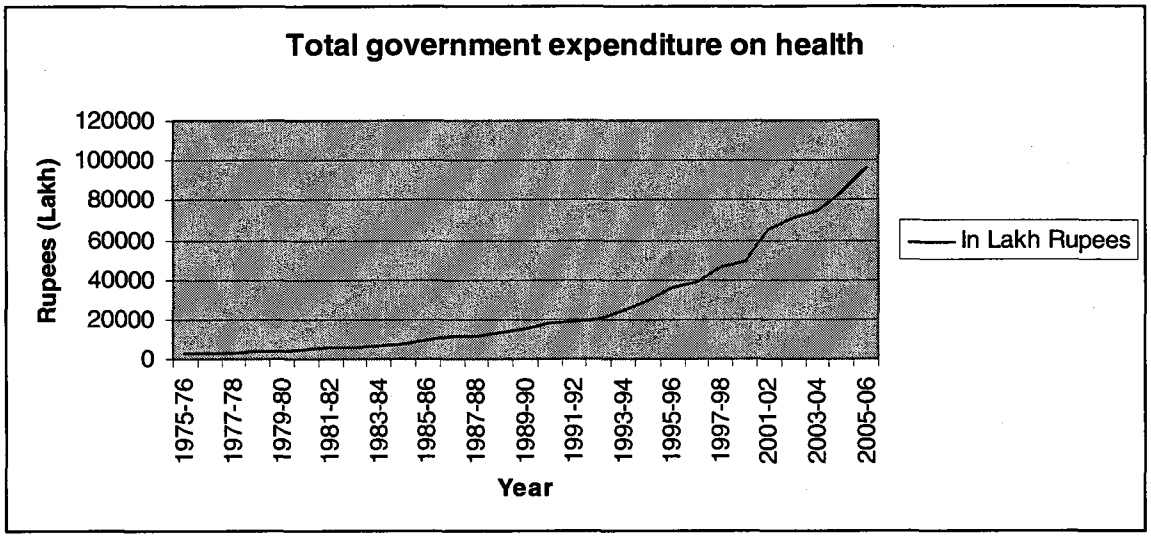
[42] The Family Welfare program has spending that relates to health (immunization for instance) but also spending that belongs in other categories (nutrition or education for example).

[43] Figures on net investments in health are difficult to compare due to the different categorisation over time. This results in tables from different editions carrying different totals for the same time period. The per capita health expenditure figures on the other hand are consistent in different editions.

[44] While the exact numbers may differ, the trend of steadily increasing total government spending in health is consistently reported.

Figure 5.2

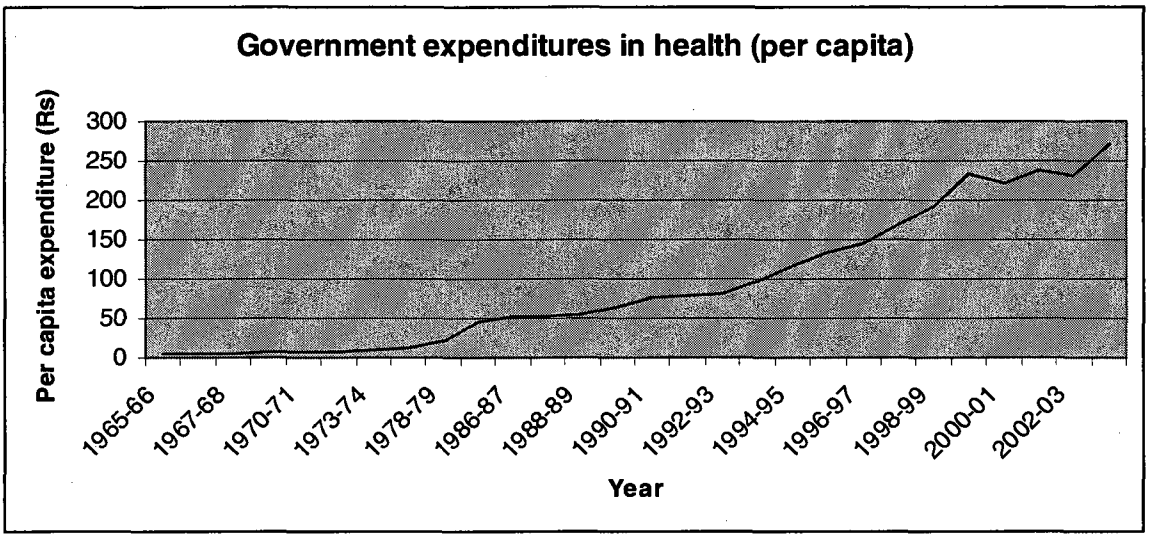


Source: Table 5.3 (not adjusted for inflation).

Kerala's per capita investments in health are historically above the Indian average, although these too increase over time. In 1969-1970 for instance Kerala invested 6.96 Rupees per capita compared to the national average of 5.16. Similarly in 2000-2001, in Kerala the government spent Rs. 238 per capita on health compared to the Rs. 191 Indian average (State Planning Board, 1970 and 2004).

While always above the national average, it has not always outdone all other states in per capita spending in health. In the 1960s, it was surpassed by Jammu and Kashmir (State Planning Board, 1967). In the 1980s, per capita health expenditure was only marginally above that of other states (Ramachandran, 1996). In the 1990s, it fell behind Rajasthan and Punjab (George, 1999).

Figure 5.3 Kerala's per capita investments in public health



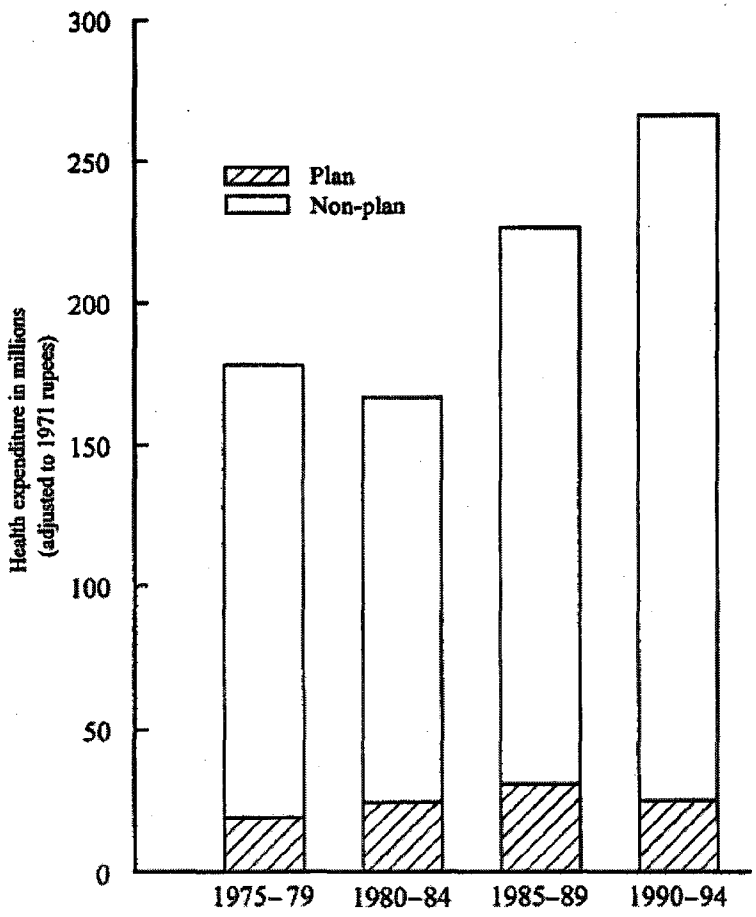
Source: Data from Table 5.4 (not adjusted for inflation)

Kerala also spends more than the Indian average when its health spending is measured as a percentage of total spending. For instance, in 2003-2004 Kerala spent 5.4% of its total expenditures on health, compared to the national average of 4.6% (State Planning Board, 2007). This was however lower than the portion it allocated to health at the turn of the century. In 1998-1999 5.9% of total expenditures were allocated to health, while in 1999-2000, 6.4% were. These are the only years for which this figure is reported in the *Economic Review, Kerala.*

Evidently, Kerala is investing heavily in health, in relation to other Indian states. The amount invested is increasing in both net and per capita terms. It is of interest to determine what drives the increased expenditure. A substantial portion of the increase in spending in health has been in salaries of existing health workers. From 1980-1994, there was a tremendous increase in non-plan expenditure, driven by salary increases (State

Planning Board, various years). Kerala has a highly mobilised population, which demands increases in salaries (Kutty, 2000).

Figure 5.4 Plan and Non Plan Health Expenditures in Kerala



Source: Kutty (2000, 105).[45]

The increased cost of health care is also related to the use of technology. There may be an excessive use of technology in Kerala. For instance, Kerala has one of the highest rates of caesarean sections during childbirth in the world. The WHO has

[45] Kutty compiles the data from various editions of *Economic Review, Kerala* and adjusts for inflation.

documented the percentage of births that normally require caesareans, and Kerala's rates surpass this (Thankappan, 2001; Varatharajan, 2004).

Moreover, there has been a serious case of mediflation, where the price of medicine has increased from 500-900% (Varatharajan, 2004; Kunhikannan & Aravindan, 2000). The Consumer Protection Act has also led to increases in the price of medical care. Patients often consult more than one doctor and are willing to sue their doctor or hospital if they suspect malpractice. Doctors as a result tend to be defensive and order a possibly unnecessary number of costly investigations.

Finally, the changing demographic nature of the state is contributing to the cost of health care provision. The fertility rate in Kerala has fallen below the replacement rate and as such, Kerala has an ageing population. The proportion of the population aged 60 or more is on the rise. In 1961 the elderly[46] accounted for 5.9% of the population, this increased to 8.8% in 1991 and 10% in 2001. There are implications of the changing demographic profile of the state on the demand for health and the ensuing cost of provision.[47] In the *Human Development Report* on Kerala, the State Planning Board writes that this new demographic does not automatically have any major effect on health care spending as "the health care cost would merely be shifted from the young and adults to older age groups, as the health of the young and adult population has improved" (2006, 33). The argument is not convincing, as no evidence is provided to demonstrate that the health of young and adult populations does not depend on the current resources invested

[46] Persons of 60 years of age or more.
[47] George (1999) questions whether Kerala can afford to grow old. He writes that health care costs will rise, but also draws attention to the increased cost of pension and the prevalence of other social security schemes that target the elderly.

into this area, and that their health would not be jeopardised by the cut in spending[48]. However, it is argued that health costs will decrease as there will be a reduced number of children per household to care for. This is an argument that is often made in relation to expenditures in education (see for example Chakraborty, 2005).

The more frequent assessment is that an aging population is likely to make a higher demand on health services (Bose, 2006; George, 1999). Geriatric medicine in Kerala often relies on expensive treatment and chronic care. However, as Kutty (2006) notes, there is no reason why for the lack of a preventative approach to geriatrics. Kerala's model of low cost health was founded in preventative and primary medicine, yet preventative and promotional approaches are not being applied to this new demographic. Lifestyle diseases are aptly named for relating to lifestyle – if that lifestyle is healthier, many can be avoided altogether. In practice, the aging population is currently contributing to the increasing the cost of the provision of health in Kerala.

While the government invests more in healthcare, the private healthcare system grows simultaneously beside it. The presence of a private sector deserves attention. A popular line of thought in scholarly writing of Kerala is that the emergence of the private sector has made up for the reduction of investment in the public sector, and has allowed good health outcomes to be achieved (Sadanandan, 2001; Government of Kerala, 2006; Chakraborty, 2005; Varatharajan, 2004; Kutty, 2006; Abraham, 2004; George & Nair, 2004). As we have seen, there was no reduction in real terms, investment actually increased. However, the increase was mostly in the form of salary increase, and there was

[48] Although, if this is the case, it would support the thesis that per capita health investments can be levelled off with no negative repercussions in health outcomes.

very little allotted to non-salary expenditure items. This led to a peculiar situation where there was more money allocated to public health than ever before, yet conditions in public health facilities were deteriorating. After the mid-1980s, the creation of new public medical facilities ground to a standstill and the maintenance of existing ones was poor (Varatharajan, 2004). There was a shortage of supplies in mid-level hospitals as the direct result of insufficient funds. Deteriorated service in the public sector, combined with increased household income from remittances, provided an ideal setting for a private health system to flourish. The private health sector was able to provide what the public sector was failing at.

The government of Kerala was well aware of the deterioration of its public healthcare system and the rise of a private one. However, its finances were in a precarious situation and this prevented it from investing more in health. This, combined with the continued increase in health spending, necessitates a careful examination of the nature and causes of fiscal imbalances in Kerala.

Kerala's fiscal problems reached a crisis point in mid 2000-2001 (Abraham, 2004). Most scholars trace the origins of this to unbalanced budgets in the revenue account starting in the 1980s (Abraham, 2004; State Planning Board, various years; Government of Kerala, 2006; George & Nair, 2004; Varatharajan, 2004). George writes that the roots extend even further into the past, and that the first symptoms are found in the 1970s (1999). All analyses of Kerala's fiscal difficulties note that there was a sharp deterioration in the 1990s, with the situation becoming seriously problematic from 1995 onwards. Kerala is not the only state in India to have its finances come under severe

stress; this occurred in most states and was similarly accentuated from 1995 on (State Planning Board, 2003). The debt/Gross State Domestic Product (GSDP) is a good indicator of the extent to which an economy can sustain its debt. In Table 5.5.a it is evident that Kerala has a worse fiscal situation than the average Indian state, but that these difficulties are shared. Figures of debt per capita are also high in Kerala, as is illustrated in Table 5.5.b.

Table 5.5.a

States	Debt/GSDP ratio (%)									
	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007
Andhra Pradesh	19	21	21	24	26	30	31	39	39	36
Karnataka	17	08	18	20	21	27	28	28	28	--
Kerala	**26**	**26**	**28**	**31**	**32**	**36**	**40**	**39**	**39**	**38**
Tamil Nadu	16	16	16	19	21	25	26	25	26	24
All States	18	18	18	22	24	30	32	32	32	36

Source: State Planning Board, 2003, (1997-2001 data); State Planning Board, 2009, (2003-2007 data)

Table 5.5.b

States	Per capita debt (Rupees)									
	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007
Andhra Pradesh	2303	2722	3223	3882	4724	6411	7565	10167	11437	11912
Karnataka	2256	2574	3029	3623	4254	5781	6617	7427	8329	8590
Kerala	**3630**	**4090**	**4940**	**6285**	**7414**	**9512**	**11478**	**12503**	**13588**	**14629**
Tamil Nadu	2352	2701	3216	3877	4644	6134	7155	7705	8742	9094
All States	2543	2944	3522	4257	4996	6402	7525	8282	9238	9754

Source: State Planning Board, 2003, (1997-2001 data); State Planning Board, 2009, (2003-2007 data)

In the early 1990s, the increasing share of the fiscal deficit in relation to GSDP led to substantial increases in interest payments. The fiscal deficit rose from 3.47% of GSDP in 1994-1995 to 7.26% in 1999-2000. The subsequent increase in interest

payments as a portion of GSDP increased from 2.57% to 3.12% in the same time period. In June 2001 the state government produced a white paper describing the nature of the fiscal crisis (Varatharajan, 2004). Reform measures followed. The result was stringent control of expenditure as well as efforts to increase its tax capacity. The ratio of fiscal deficit to GDSP decreased to 5.1% in 2000-2001, 4.12% in 2001-2002 and after some variation in the intervening years, has decreased to 2.81% in 2009-2010 (State Planning Board, various years). Its current ratio brings it under the standard suggested limit of 3% (Varatharajan, 2004).

A lesson from Scott's *Seeing like a state*, may be applicable in understanding the fiscal crisis in Kerala. Scott demonstrates that there is a tendency to attempt to reduce a complex phenomenon to an 'event A leads to event B' type of scenario, which is seldom accurate (1998). There are two popular simplifications that occur in scholarly analysis of the fiscal deficit in Kerala. The first blames the fiscal deficit on the significant investments that the government made in social spheres (one of which is health). The second approach blames the Indian government for having diminished its transfer of funds to Kerala. Both sides contain elements that undoubtedly did contribute to the state's fiscal difficulties and will be examined more thoroughly below.

George (1993 & 1999) has written extensively about the fiscal crisis in Kerala, contending that the state could not generate enough revenue to finance and maintain its social development. The fiscal crisis was the result of social spending in a stagnating economy. This line of argumentation is a central part of the theoretical exploration carried out in chapter 2, and we will return to it in the discussion section of this chapter.

Tharamangalam (2004) also wrote about the crisis point that Kerala had reached, arguing that the failure to generate growth (which was at the root of the crisis) lay in the model of state intervention that had been followed. The lack of growth and high spending certainly contributed to the fiscal crisis.

George and Nair (2004) report that the annual growth rate in government health expenditures from the formation of the state up to 1990 (13.04%) outstripped both the growth rate of total government expenditures (12.45%) and the growth rate of GSDP (9.81%).

However, the nature of the expenditure also needs to be examined. Jeromi (2003) reports that salaries, pensions and interest comprised 71% of total expenditure in 1999-2000, which was a larger percentage than a decade earlier when the same elements comprised 56% of the state's expenditures. Jeromi thus adds to this line of argumentation, making it slightly more nuanced, explaining "the underlying reason for the fiscal and liquidity crisis faced by the state can be traced to the high level of pre-emption of resources for the payment of interest, pensions and salaries and a relatively high level of spending on social services, especially education, public health, social security and welfare" (2005: 3272).

The second line of reasoning turns to state-centre relations. First it needs to be highlighted that the Constitution recognises that states themselves do not have the capacity to generate enough funds to finance their responsibilities. Income tax for instance is collected by the Indian government. In Kerala this is a considerable loss of taxation power as it is the only way it could tax remittances, which account for a large

portion of state income.[49] Kerala depends on central transfers to finance its expenditures. This is not indicative of overspending.

In 1991, India adopted a New Economic Policy in order to control its own fiscal difficulties. This was a policy of liberalisation that was endorsed and promoted by the World Bank and the International Monetary Fund. It imposed strict budget control measures. In 1994, the central government curtailed its health spending, which reduced the plan expenditure in Kerala.

The New Economic Policy translated into a dramatic decline in transfers from the central government to Kerala. In 1991, the transfers accounted for 10.43% of Kerala's Net State Domestic Product (NSDP) and by 1999, they had decreased to a value of 4% (Sandbrook *et al.,* 2007). Kerala's deteriorating fiscal position is thus explained by the dramatic decline in transfers from the federal government.

In the *Economic Review, Kerala* the displeasure of the state can be seen in response to the new transfer of funds. It is critical of the Eleventh Finance Commission's choice of criteria and their weight in the distribution of funding. This introduced the area of the state into its considerations, which is a disadvantage to Kerala. Kerala argues that the area of a state is not related to its need for funds from the central government (State Planning Board, 2000).

[49] For instance, in 1999-2000, remittances were over 20% of the Net State Domestic Product (NSDP)! Since 1980, they have accounted for at least 9% of the NSDP, and this has been over 15% since 1992 (with the exception of 1990) (Government of Kerala, 2006: 46).

Table 5.6 Central Transfers to states (share of central taxes and grants)

State	Total Central transfers (%)	
	2001-2002	2009-2010
Andra Pradesh	6.7	7.65
Karnataku	4.9	4.25
Kerala	**2.7**	**4.77**
Tamil Nadu	4.5	2.49
All States	100	100

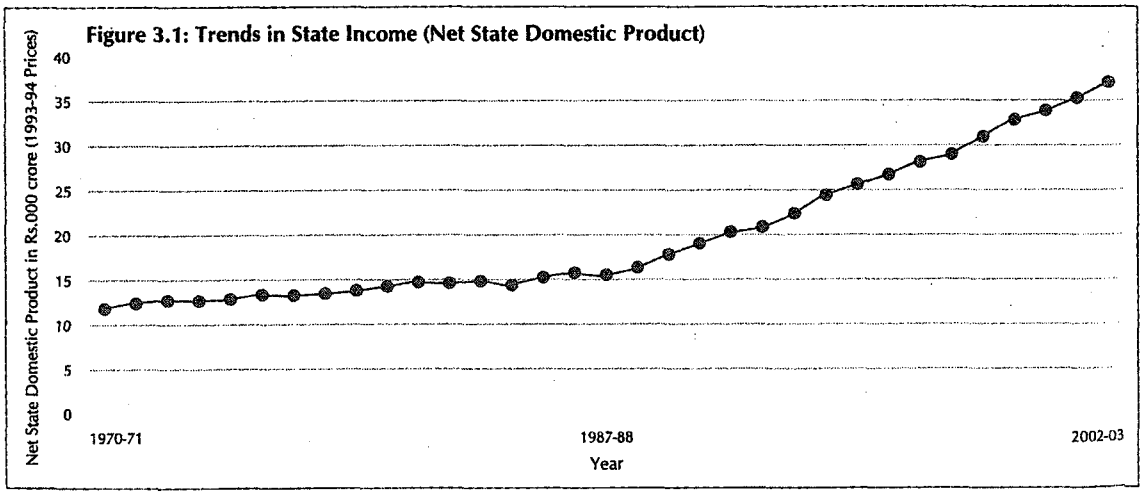
Source: State Planning Board, 2004 and 2010

The economy

Kerala has had a rather uneven trajectory of economic growth. In the decade from 1970-71 to 1980-81 the NSDP growth rate was 1.4%. In the next decade from 1980-81 to 1990-91 the annual growth rate was of 3%. Since the 1990s, the economy has been growing at a rate that is very close to the Indian average, averaging an annual growth rate of 6.5% between 1990-91 and 2000-01(Babu, 2005; Chakraborty, 2005). Growth in income per capita and of NSDP are traced in Table 5.7. Figure 5.4 provides a visual comparison of the trend using a constant currency.

Kerala has moved from a relatively poor state in India, to a relatively rich state. It first had an income per capita that was higher than the Indian average in 1997-98 (State Planning Board, 1999). Since that point it can no longer be considered a relatively poor state in the Indian context – even if in 2007-2008, its per capita income was below the national average, it was only marginally so (Rs. 33372 versus Rs. 33492) (State Planning Board, 2009).

Figure 5.4



Source: Government of Kerala, 2006, 46.

Discussion and analysis of the data

The main goal of the inquiry is to examine the extent to which health depends on economic growth, to hypothesise about maintaining good health at a stabilised level of economic activity. In broad terms we will look at the relationship between economic growth and health, and economic activity and health in Kerala. Human Development scholars question the ability of governments to maintain human development expenditures without economic growth. However, it is noted that the quality of government expenditures is more important than the net quantity. We will return to our final speculation of chapter 2, that is, do continually increasing government expenditures contribute to health or can these be levelled off with no negative consequences for the health of a population? The data presented above from Kerala sheds an interesting light on these theoretical questions.

First, it is clear that health outcomes, as measured by infant mortality and life expectancy, are unrelated to the overall pattern of economic growth in Kerala. For the first thirty years, Kerala's health outcomes increased while the economy grew by very little. This lop-sided development did not go unnoticed and triggered much debate about the sustainability of the model. Kerala passed under the radar of Ranis and Stewart's (2000) earlier cited study due to is status as a state within a country. Later, when the economy started to grow at a more rapid pace, health outcomes continued to increase. It is now placed in a position of virtuous development, where both human development and economic activity increase (Chakraborty, 2005; Government of Kerala, 2006).

Second, Kerala began significant health improvements when it was a relatively poor state in India, measured by income per capita. Good health was being pursued at relatively low levels of economic activity. It is difficult to compare Kerala's level of economic activity with other countries. As it is not a country itself, its per capita income is not consistently translated into a currency that can be compared with other countries. Kerala is not considered a relatively poor state in India today as it has an income per capita that is similar to the national average. However, India as a whole is classified by the World Bank as a lower middle income country (2010). It can be assumed that Kerala would also fall into this classification. In any case, Kerala has a relatively low level of economic activity and achieves relatively good health outcomes.

Turning to government expenditures in relation to economic growth, it is evident that net health expenditures were able to increase over the entire period of mixed economic growth. In the discussion of Kerala's fiscal crisis, the potential role of health

expenditures in leading to the crisis was touched upon. It is important to note that the fiscal crisis began at the earliest account in the 1970s, and became seriously problematic from the mid 1990s onwards. From the formation of Kerala to the 1970s, Kerala's health expenditure increased dramatically. In 1965-66, per capita health expenditures were Rs. 4.49, which more than doubled to reach Rs. 9.87 in 1973-74. This initial increase in expenditure occurred in a period of low economic growth and yet did not trigger a fiscal crisis. This does not diminish the role of later increases in government health spending in the fiscal crisis. It is interesting to note however, that the fiscal crisis sets in during a period of economic growth. As Figure 5.4 demonstrates the economy grows quickly beginning in the mid 1980s, which coincides with the steady deterioration of the fiscal situation. This finding is at odds with the association in Human Development writing of government investments in human development being unsustainable during periods of low economic growth, and being fiscally sustainable in periods of higher economic growth.

It is also of interest to note the effect of the fiscal crisis on health spending. The crisis reached a peak in 2000-2001. Net expenditures in health increased through the heart of the crisis and have continued to increase since the worst phases have been passed. The government of Kerala was (and still is) concerned with reducing expenditures, and yet health expenditures were allowed to increase. It is clear that the amount of resources invested in health were constrained. This is part of the reason the private sector grew.

This leads to the most pertinent relationship: the one between government spending and health outcomes. Per capita government expenditures are continually increasing in Kerala. Do health outcomes increase proportionally? Kerala has reached levels of health that hover just below the best outcomes in the world. An infant mortality rate of 13 per 1000 live births places it in a similar position to Argentina (13), Barbados (10), Belarus (11), Bulgaria (9), Kuwait (9) and Latvia (8). Its life expectancy of 74 years is higher than Malaysia (73), and Jamaica (72). It is not far behind Cuba (77) and Kuwait (78) (WHO, 2010).

The discussion earlier drew attention to the fact that increased expenditure on health in Kerala was mainly captured by increasing salaries of health professionals. The other areas that contribute to increased health spending are similarly related to actual health outcomes (excessive use of technology, multiple consultations, etc.). Kerala appears to be spending more in health, but with less of an effect on health outcomes as a result. This is a reminder that the quality of the spending is in fact the main determinant of the effect on health outcomes.

The rate of improvement in health has slowed. This is partly related to the quality of the spending, but also to the nature of the health situation. When the infant mortality rate was 120 (in 1951-1961), there was ample room for improvement. As the infant mortality rate has fallen, it has become more difficult and expensive to make it fall more. As a result, in the 1990s infant mortality rates have not changed significantly. In 1993 the rate had already reached 13.

Heller (1994) writes that redistributive policies in Kerala have reached a point of diminishing returns. Diminishing returns of course do not mean that improvement has abated, but that the pace of improvement has slowed. There is room for Kerala to make improvements in the health status of its population. However, this is limited. It is possible to reduce infant mortality and expand life expectancy, but not indefinitely.

Conclusion

Kerala's achievements in health as measured by infant mortality and life expectancy speak for themselves. While these outcomes are impressive, the story of health in Kerala becomes convoluted by the interaction between the Indian government and the state government; the rise of the private sector; the increasing cost of health mainly due to salaries and the use of technology; the high level of morbidity and the changing nature of population demographics. Addressing these issues will be important in the continued pursuit of health in Kerala. It will demand strong and focused public policy. The coming years will show whether the merits of the decentralisation and the new health insurance scheme are up to the task.

A longitudinal analysis of the resources allotted to health, the government's ability to invest these resources and the impact on health has been carried out to advance our understanding of the relationship between health outcomes and economic growth and economic activity. Examining the interaction of these factors in Kerala allows for two main conclusions. First, the link between economic growth and health outcomes and between economic growth and the government's ability to maintain expenditures on

health was found to be weak. Second, the recent increases in health expenditures do not have high returns on health outcomes. Together, these hint at the possibility of pursuing health within limited levels of economic activity.

Tables

Table 5.1 Infant Mortality Rate (per 1000 live births)

Year	In Kerala	In India
1966	68.3	
1970	52.6	129
1973	52	
1975	57.3	
1976	56.3	
1977	50.1	
1978	42.6	
1979	44.4	
1980	42	117
1990	21	80
1991	17	80
1992	17	78.5
1993	13	74
1994	16	74
1995	15	74
1996	14	72
1997	12	71
1998	12	72
2002	10	63
2008	13	

Source: State Planning Board, various years.

Table 5.2 Life expectancy (at birth)

Period	In Kerala		In India	
	Males	Females	Males	Females
1951-60	46.17	50.00		
1966-70	56.70	60.00		
1971-73	60.62	62.08		
1975-77	62.53	65.17		
1976-78	63.63	66.19		
1977-79	63.82	66.91		
1979-80	64.70	69	54.1	54.7
1978-80	64.23	67.88		
1980-82	66.30	70.70		
1981-83	66.00	71.80		
1982-84	66.50	73.40		
1983-85	65.70	72.50		
1984-86	66.90	72.80		
1989-90	67.50	72.90	59.0	59.7

1990-91	69.00	72.00		
1991-96	67.23	72.37	60.6	61.7
1996-00	68.23	73.62	62.3	64.2
2001-02	71.67	75.00	64.11	65.43

Source: State Planning Board, various years

Table 5.3 Total Government spending on health (excluding Family Welfare)

Year	In Lakh Rupees
1975-76	2758.09
1976-77	2915.54
1977-78	3174.79
1978-79	3577.14
1979-80	4119.7
1980-81	4880.65
1981-82	5842.85
1982-83	5938.22
1983-84	6979.43
1984-85	7428.81
1985-86	9856.87
1986-87	11375.43
1987-88	11739.20
1988-89	13210.53
1989-90	14950.88
1990-91	18117.3
1991-92	19231.33
1992-93	20106.93
1993-94	24864.03
1994-95	29711.03
1995-96	35757.15
1996-97	38766.55
1997-98	46548.78
1998-99	49534.48
2001-02	65587.79
2002-03	71214.24
2003-04	74572.39
2004-05	84339.78
2005-06	96049.66

Source: The data from 1975-1999 is from the State Planning Board, 2000. The remaining data are from the State Planning Board, 2007.

Table: 5.4 Government Spending on Health in Kerala

Year	Per capita expenditure on

	health in Rs
1959-60	Na
1965-66	4.49
1966-67	5.28
1967-68	5.93
1969-70	6.96
1970-71	7.61
1971-72	8.16
1973-74	9.87
1975-76	11.23
1976-77	Na
1977-78	Na
1978-79	20.63
1979-80	Na
1980-81	Na
1985-86	46.27
1986-87	52.74
1987-88	52.37
1988-89	55.75
1989-90	64.34
1990-91	76.52
1991-92	78.6
1992-93	80.04
1993-94	98.53
1994-95	116.16
1995-96	134.31
1996-97	144.12
1997-98	168.22
1998-99	193
1999-00	232.68
2000-01	221.26
2001-02	238.26
2002-03	231.58
2003-04	271
2004-05	Na
2005-06	Na
2006-07	Na
2007-08	Na
2008-09	Na

Source: State Planning Board, Kerala, various years
Note: The years marked Na indicates that in the appropriate edition per capita government spending on health was not calculated. Years that are missing entirely from the table are editions I was unable to access.

Table 5.7 Economic History of Kerala

Year	NSDP (in lakh Rs.)	Income per capita (in Rs.)
1960-61	43222	259
1961-62	43825	256
1962-63	45448	260
1963-64	46357	259
1964-65	48353	264
1965-66	48839	261
1966-67	51378	268
1967-68	54788	279
1968-69	57447	286
1969-70	59965	292
1970-71	62575	298
1971-72	65237	304
1972-73	66744	304
1973-74	68251	303
1974-75	70489	307
1970-71	116993	557
1971-72	122614	571
1972-73	125226	570
1973-74	124950	556
1974-75	126833	552
1975-76	132106	562
1976-77	130182	544
1977-78	134469	552
1978-79	139854	564
1979-80	139739	555
1993-94	2340083	7788
1994-95	2560801	8417
1995-96	2688706	8728
1996-97	2802645	8987
1997-98	2863315	9079
1998-99	3064366	31856
1999-00	3271615	10178
2001-02	4291033	13421
2002-03	6255964	19367
2003-04	6766710	20763
2004-05	7088933	21563

2005-06	8172250	24649
2006-07	10878037	32544
2007-08	1124409	33372

Source: State Planning Board, 1977, 1981, 1999, 2002 and 2009. Data for 1960-61 to 1974-75 is in 1960-61 rupees. Data from 1970-71 to 1979-80 is in 1970-71 rupees. Data from 1993-94 to 1999-00 is in 1993-94 rupees. Data from 2000-01 to 2007-08 is in 1999-00 rupees.

Chapter 6:

Conclusion

At the outset of this study, a problematic was introduced re the pursuit of continued expansion of economic growth as a viable means for the current human population to advance human development. One of the implications of the biophysical limits of the earth is that there are eventual limits to economic growth. This recognition directed the study's exploration of the pursuit of health at stabilised levels of economic activity, by exploring the experience of Cuba and Kerala.

The theoretical examination of the Human Development approach revealed the potential use of economic growth for human development. Economic growth has the ability to influence human development through two main avenues: individual income and government expenditures. It is widely agreed that there are limits to the benefits of increased individual income in the expansion of human development. The use of government expenditures is not as evident. It was illustrated that the net quantity of expenditures is unrelated to human development outcomes. However, when expenditure quality is good, the amount may also be important. The fundamental issue in government expenditure was reduced to the relationship between per capita expenditures and human development outcomes. It was noted that Human Development scholars question the ability of governments to maintain spending on human development during periods of low or zero growth. Finally, our analysis found that the Human Development approach is hesitant to engage in the exploration of whether human development can be pursued at

certain levels of economic activity rather than in scenarios of continued economic growth. Nonetheless, it was demonstrated that this is a question of theoretical interest and of practical importance.

The underpinnings of the Human Development approach found in the second chapter guided the rest of the analysis. In order to limit the scope of the study, health was selected as a component of human development. The focal point was found to centre on the government's fiscal ability to spend and the implications of its expenditure on health. Two communities whose governments have pursued health under mixed economic conditions were examined. These were Cuba and Kerala. This concluding chapter will 1) acknowledge outstanding biases in the study; 2) review the lessons that can be drawn separately from each of the case studies; 3) return to the research question and draw final conclusions; and 4) suggest areas of further inquiry.

Biases and weaknesses inherent to the study

There are several elements that need to be addressed before noting the lessons that each case study offers for the research question. First, measuring health by infant mortality and life expectancy influences the strength of the conclusions. These are indicators that have definite limits to improvement. It is impossible to reduce the infant mortality rate below zero, and increasingly expensive to reduce it below the existing low rates. The same is true of life expectancy, where extending average life expectancy beyond already good levels is very difficult. This favours the conclusion that there are eventually decreasing marginal returns to investments in health. However, both indicators are in

fact good gauges of health in a population. Moreover, while morbidity is more difficult to measure, it is likely that it too has real limits to improvement, and certainly one could imagine diminishing returns on investments in health, using morbidity as an indicator. The question of morbidity raises another issue. It was demonstrated that in fact Kerala fared poorly in morbidity. Contrary to the good mortality data, this indicates that real improvements can and should be made in health. These improvements may require better and more investments in health (and factors affecting health – nutrition and sanitation for instance in this case). It is possible that improvements in mortality are easier and cheaper to achieve than improvements in morbidity. Conclusions drawn about health measured only from mortality indicators risk being incomplete and misguided.

The second acknowledgement serves to underline that in the empirical chapters on Cuba and Kerala there was an emphasis on the resources devoted to health and these are underestimations of the real cost of health in both Cuba and Kerala, while simultaneously, it places more importance than is due on the quantity of health expenditures. The goal of Chapter 3 was to recognise the other investments that impacted health. This limited study was unable to account for all of them empirically and as such is biased to underestimate the real cost of health,[50] This study focused on the quantity of resources allocated to health, despite recognising that the quality of the expenditure is of equal importance. The health systems in Cuba and Kerala were described with the objective of underscoring the importance of the nature of the expenditure. The reason that the volume of health expenditures assumed a position of centrality in this study is the

[50] By focussing on government expenditures, the burden of caring for sick family members was sidelined. This too is an important cost (for example see Gulati & Rajan, 1999).

following: health outcomes do require economic inputs (the quality can influence the amount needed); there are eventual limits to economic growth; as such, it is of interest to uncover the minimal amount of inputs required to pursue health. Furthermore, total government health expenditures were reported but were not disaggregated to show the various types of health expenditures (promotive, preventative, primary, curative, chronic care, etc) and trends within these. Such an analysis would have been interesting and have allowed for stronger conclusions, but was impossible to do with the available data.

The third acknowledgement is that in neither case study was economic growth actually limited by the biophysical limits of the earth. This inevitably weakens the strength of conclusions that may be drawn. Kerala and Cuba classify as lower-middle income and higher-middle income communities. Their rollercoaster-like economic histories are the result of geo-politics and international economics more than ecology. This is where one of the main differences between social sciences and applied sciences becomes evident. In social science it is impossible for the researcher to manipulate the variables and observe an outcome. Cuba, unlike Kerala, has not had prolonged periods of economic stagnation that are useful to examine in regard to the thesis of this study. However, the relatively low levels of both of their economic activity and the periods of economic stagnation (in Kerala) made them useful cases for this study. Due to the above constraints, the final conclusions of this study are tentative and conditional based on further research.

The final issue that needs to be addressed relates to the scope of the study. Analysis was attempted for four distinct variables: health outcomes, government

expenditure, government fiscal balances, and economic levels and growth. While it is common for studies to examine the interaction of various combinations of two of these variables, it is quite rare for a study to undertake all four. Undertaking an analysis of all four variables makes the implicit assumption that they are linked. This assumption is not the author's alone, but can be taken from the Human Development approach. In the earlier analysis, it may appear that the author makes rather large shifts from one data area to the next. However, the nature of the research question posed necessitated the consideration of all four variables. Nonetheless, researching only whether a government is able to finance health expenditures is simplistic. Presumably total government revenues invariably surpass health expenditures.

Evidence from Cuba

The longitudinal analysis of Cuba found, consonant with other studies, that Cuba has levels of health that rival the best health outcomes in the world. Health has been considered a right of all citizens and a duty of the state. Generally, the trend is of increasing government health expenditure, in per capita terms. The increased expenditure took place during periods of both low growth (ie. in the 1960s) and high growth (ie. in the 1970s). Scholars attribute the ability of the government to invest highly in health to the aid it received from the Soviet Union. When the Soviet Union collapsed this triggered an economic crisis in Cuba. Repercussions from the crisis were reflected in net and per capita health spending by the government during the early 1990s. However, since the Special Period, the government has returned to the trend of continually

increasing health inputs, this time without the aid of the Soviet Union, but during a period of economic recovery and growth.

The empirical evidence from the four variables studied in Cuba allows for several observations. First, health outcomes do not appear to be closely linked to economic growth. During the stagnation of the 1960s, infant mortality statistics worsened but life expectancy improved – health outcomes move in opposite directions.[51] These two indicators show improvements over the rest of the period, which continued amidst a significant economic crisis. The second observation, which is in a similar vein to the first, is that health outcomes were improved at relatively low levels of economic activity. Cuba has only recently graduated to the World Bank's classification of upper-middle income country. As the Cuban minister of science, technology and the environment observed: "Limited financial resources do not condemn a country to poor health if the resources are distributed and used well, and if we train health and science workers committed to their mission and their people. If there is one contribution Cuba can make in this field it is to prove that it can be done" (Miyar, 2010).

Third, increasing health expenditure is not closely linked to increasing debt. Since the collapse of the Soviet Union, health expenditures have continued to increase. The evidence presented in Table 4.5 demonstrates that health expenditures and fiscal imbalances do not even always move in the same general direction.

[51] It should be recalled that the increase in infant mortality rates may simply be a result of more accurate data collection.

Finally, it is noted that per capita health expenditures may be reaching points of diminishing marginal returns. That is, continued improvements in health are proving to be increasingly expensive, as health has already reached high levels.

Evidence from Kerala

The longitudinal study of Kerala also allowed for interesting observations. Health in Kerala is relatively good when compared to other Indian states, and is not far behind the best health outcomes in the world. Health in Kerala continues to be a priority for the state, however there has been a rise in the role of a private healthcare system in curative medicine. The private system grew alongside a public health sector that received increasing inputs, and yet whose quality was decreasing. Health outcomes in Kerala give rise to another apparently paradoxical situation: indicators of mortality and morbidity lead to diverging rankings when compared with other Indian states. Kerala was long criticised by Human Development scholars for its lack of economic growth, as this was assumed to limit its ability to maintain its model of high health (and other aspects of human development). However, since the mid-1980s, these concerns have somewhat abated as there has been regular economic growth in the state.[52] Kerala, like other Indian states, has encountered fiscal difficulties. In Kerala the fiscal crisis was particularly acute.

The interaction of health outcomes, government expenditure, fiscal balances, and economic growth and activity give rise to several observations. First, health outcomes are not dependent upon economic growth. Kerala maintained a position of 'lop-sided'

[52] There is some continued concern about the nature of the economic growth, and a certain amount of hesitancy to describe it as sustainable.

development for approximately 30 years. Kerala also achieved significant improvements in health at relatively low levels of economic activity. For a long time Kerala was a relatively poor state in India, yet had health outcomes superior to the Indian average. Although it is no longer classified as a poor Indian state, on an international scale, Kerala's level of economic activity can be considered relatively low.

The next observation addresses the relationship between government health expenditures, the ability to maintain these expenditures and economic growth. The earliest roots of the fiscal crisis in Kerala are reported to be found in the 1970s. This indicates that the increased spending that occurred for a full decade during the 1960s is not responsible for the crisis according to scholarly analysis. During the 1960s, net and per capita expenditures in health increased. In fact, both have increased annually, without exception, to the present. While health expenditures may have contributed to the fiscal crisis, it is impossible to fully attribute it to them. Moreover, the fiscal crisis worsened, reached its peak, and improved *during* a period of economic growth.

Finally, it is apparent that while health expenditures have increased in Kerala, their impact on health may not be proportionate. This was particularly evident in the 1980s, when the public sector hospitals were falling into disrepair despite the increased expenditure by the state. There are two main explanations for the divergence of health outcomes and health spending in Kerala. The first is that highly mobilised health workers capture much of the increase in health spending in the form of salary. The second is that the changing demographic profile of the state is demanding more expensive curative care.

General Conclusion

The analysis carried out in Kerala and Cuba was able to address some issues that have not been well explored in Human Development literature. The research question posed whether the pursuit of health required continued economic growth or whether health could be pursued at stabilised levels of economic activity. In Human Development theory, the answer lies in the relationship between government spending in health, government finances and health outcomes.

The relationship in Cuba and Kerala between these factors leads to similar conclusions. A comparison between health outcomes and economic growth shows in both cases that health outcomes can improve during periods of low growth and *even* during periods of regression and stagnation. Human Development theory recognises that health can be achieved in the short term with little economic growth, but argues that in the long run, economic growth is necessary for the government to maintain its expenditures.

In fact, in both of the case studies the governments demonstrated their ability to maintain health expenditures during fiscally difficult periods. Human Development scholars would point to the fiscal difficulties encountered in both Cuba and Kerala as indications of unsustainable government expenditures. In Cuba, it is particularly difficult to understand the origins and amount of debt accumulated during the period when the Soviet Union aided the country. However, since the collapse of the Soviet Union, Cuba has increased its health expenditures, yet these can not be closely linked to the size of its fiscal deficit. In Kerala, health spending has increased through the epicentre of the fiscal crisis. The financial health of the state is improving, while health spending increases.

Moreover, fiscal difficulties themselves do not appear to be closely linked to the growth of the economy. While health expenditures do not appear to be closely linked to the fiscal problems of either government, keeping a balanced budget has been difficult in both Kerala and Cuba. This was a particular difficulty in Cuba during the Special Period and in Kerala during the fiscal crisis. This observation should be placed in perspective: many governments have accumulated massive debts, without particularly high health – or human development - expenditures.

These first two observations suggest that economic growth may not be of great importance. Health can improve in periods of low economic growth. Health expenditures by the government are not closely linked with fiscal imbalances, which in turn are not closely linked to economic growth. The salient Human Development lesson from Kerala and Cuba, which has been noted repeatedly in scholarly analysis, is that countries with limited resources can pursue health, if they are truly committed. Their holistic approach to health offers a model for other societies. Pursuing health was not a matter of targeting one particular health issue, but part of a comprehensive health and human development policy. The experiences of Cuba and Kerala also shed light on some of the sequences of challenges faced in public health policy. Improving infant mortality and life expectancy gives way to new issues: a rise in lifestyle diseases and caring for an aging population. Kerala's health system is illustrative of some of the costs associated that can be associated with a mixed (public and private) health system.[53] There is a difficulty in

[53] It is clear however, that Cuba spends significantly more on health As Kerala is not a country, international agencies do not report regular data for it. This unfortunately limits the comparison of their health expenditures. Despite evident problems arising from converting 2003-2004 rupees into current Cuban pesos, it does provide some insight into the extent of the differences in spending. As such, in 2003-

enticing professionals to work in the public service (and may necessitate higher salaries). This is not a problem encountered in Cuba, which even 'exports' health professionals (who incidentally have low salaries).

However, the Human Development approach does not explore the implications of the high health achievements at low levels of economic activity in Kerala and Cuba. Yet, their examples solicit and justify exploring the possibility of pursuing health at stabilised levels of economic activity. Empirically, in broad terms, health has been improved and maintained at relatively low levels of economic activity in Kerala and Cuba.

However, in both Cuba and Kerala, per capita health expenditures are continually increasing. For a government to be able to fund increasing per capita health expenditures, only a certain amount of shifting of expenditure priorities can occur. Eventually greater expenditure necessitates an expansion of revenue, which may require economic growth. Thus it is of interest to examine the relationship between health expenditures and health outcomes.

Part of the increased expenditure in both case studies reflects new health issues arising from their aging populations. The demographic transition occurring in both societies is the direct result of their health accomplishments: people are living longer and having fewer children. In theory this transition does not necessitate excessive increases in health expenditures by the government. However, in practice, in both Cuba and Kerala health expenditures have increased. Despite health models that are founded in similar

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2004, Kerala spent 271 rupees per capita, which translates into 5.87 Cuban pesos. In the same year, Cuba spent 180.26 pesos per capita on health. It is to be expected that Kerala spends less on health than Cuba; it has a smaller economy, a larger population and is only a partial provider of health (vibrant private health system).

principles of preventative, promotive and primary health, in both Cuba and Kerala the response to the aging population is expensive treatment that relies heavily on technology. It may be possible to approach geriatrics differently and thus reduce health costs in both cases. The diminishing returns to health expenditures are related to their current approach: treatment is more expensive than prevention.

There is another element that gives rise to diminishing returns of health investments – this is that both societies have reached states of relatively good health. It is clear that Cuba has better health outcomes than Kerala, which therefore has a wider margin for improvement. There is an absolute limit to possible improvements in health, and as societies get closer to it, the cost of continued improvements increases. This finding suggests that per capita government health expenditures in real terms could be levelled off with no negative consequences for health. It follows logically that per capita levels of economic activity could be stabilised, without diminishing the ability of the government to maintain its expenditures on health. This study therefore supports the earlier cited observation that there are diminishing marginal returns on investments in health: it appears that the diminishing marginal returns to health expenditures are not limited to individual expenditures, but are encountered in government expenditures as well.

The conclusion of this study is not that societies in the South should immediately discard economic growth, but that in pursing health, unlimited economic growth does not appear to be necessary. Good health can be achieved at low levels of economic activity, and presumably also at stable levels of economic activity. As a result, the implications of

eventual limits to growth arising from the biophysical limits of the earth, do not pose an inherent obstacle to the pursuit of health. As the global human community strives to strike a balance with the earth, good health can be pursued.

Implications for further research

Earthly limits raise a multitude of other questions for human development. It has been noted that the Human Development approach has been hesitant to address the implications of levels of economic activity on the pursuit of human development, rather than focusing on economic growth. The findings of this study suggest that it is a field that deserves attention.

This study examined whether health could be pursued at stabilised levels of economic activity. It would be of interest to engage in a similar study of broader scope that analysed the relationship among all of a governments' human development expenditures (or single element studies of other aspects) and their outcomes. There is already some evidence showing that expenditures on education can decrease when population growth slows (Chakraborty, 2005).

The implications of limited economic growth on employment can drive research in yet another direction. Employment is an important aspect of human development typically perceived to rely directly on economic growth, not on government expenditures.

It is apparent that this study only began to address some of the implications of eventually limited economic growth on the pursuit of human development, focusing on health. The encouraging findings from Kerala and Cuba, as well as the possibility for

theoretical explorations in the Human Development approach, should precipitate more research in the area.

References

Abraham, K. (2004). Kerala. The fiscal crisis and its aftermath. In B. Prakash (Ed.), *Kerala's economic development* (Second Edition). (pp. 374-417). New Delhi: Sage Publications.

Agyeman, J. (2005). *Sustainable communities and the challenge of environmental justice.* New York: New York University Press.

Alailama, P. & N. Sanderatne. (2000). Social policies in a slowly growing economy: Sri Lanka. In Mehrotra, S. & R. Jolly. (Eds.), *Development with a human face.* (pp. 235-263). New York: Oxford University Press.

Alexander, K. (1980). Emergence of peasant organisation in South India. *Economic and political weekly*, 15 (26) A72-A84.

Alkire, S. (2010). Human Development: Definitions, critiques, and related concepts. *Human Development reports research paper 2010/01.* United Nations Development Program.

Alkire, S. & S. Deneulin. (2009). The human development and capability approach. In S. Deneulin & L. Shahani (Eds.), *An introduction to the human development and capability approach.* (pp. 22-48). United Kingdom: Earthscan.

Alma Ata Declaration. (1978). International conference on primary health care. September 6-12, 1978: Alma Ata, USSR.

Anand, S. & M. Ravallion. (1993). Human development in poor countries: On the role of private incomes and public spending. *The Journal of Economic Perspectives, 7 (1), 133-150.*

Anand, S. & A. Sen. (2000a). The income component of the Human Development Index. *Journal of human development 1(1), 83-106.*

Anand, S. & A. Sen. (2000b). Human development and environmental sustainability. *World development, 28 (12), 2029-2049.*

Andaya, E. (2009). The gift of health. Socialist medical practice and shifting material and moral economies in post-Soviet Cuba. *Medical anthropology quarterly, 23 (4),* 357-374.

Aravindan, K. (2007). Medical education in Kerala – A success story turning sour. In C. Kartha (Ed.), *Kerala fifty years and beyond.* (pp. 191-204). Thiruvananthapuram, India: Goutha Books.

Babe, R. (2006). *Culture of ecology. Reconciling economics and environment.* Toronto: University of Toronto Press.

Babu, S. (2005). Kerala's economic growth trajectory. *Economic and political weekly, 40(30),* 3291-3292.

Baldacci, E., A. Clements, S. Gupta & Q. Cui. (2008). Social spending, human capital, and growth in developing countries. *World development 36(8), 1317–1341.*

Barraclough, S. (2000). Protecting social achievements during economic crisis in Cuba. In Ghai, D. (Ed.). *Social development and public policy. A study of some successful experiences.* (pp. 229- 276). In association with United Nations Research Institute for Social Development. London: Macmillan Press.

Beaumont, T. (1997). *The end of the yellow brick road, ways and means to the sustainable society.* England: Jon Carpenter Publishing.

Berg, B. (2004). *Qualitative research methods for the social sciences.* Toronto: Allyn & Bacon.

Bhargava, A., D. Jamison, L. Lau & C. Murray. (2001). Modeling the effects of health on economic growth. *Journal of health economics, 20, 423-440.*

Bloom, D., D. Canning & G. Fink. (2010). Population aging and economic growth. In M. Spence & D. Leipziger (Eds.), Globalisation and growth: Implications for a post-crisis world. (297-328). Washington: The International Bank for Reconstruction and Development/ The World Bank.

Bloom, D. & D. Canning. (2003). The health and the poverty of nations: From theory to practice. *Journal of human development and capabilities 4 (1), 47-71.*

Booth, D. (2004). *Hooked on growth.* Oxford: Rowman & Littlefield Publishers, Inc.

Bose, A. (2006). Demographic transition and the greying population. In J Tharamangalam (Ed.). *Kerala the paradoxes of public action and development.* (pp. 146-168). New Delhi: Orient Longman Private Limited.

Boyle, M., Y. Racine, K. Georgiades, D. Snelling, S. Hong, W. Omariba, P. Hurley & P. Rao-Melacini. (2006). The influence of economic development level, household wealth and maternal education on child health in the developing world. *Social science & medicine, 63, 2242-2254.*

Brenner, P., M. Jimenez, J. Kirk & W. Leo Grande. (2008). Introduction. History as prologue. In P. Brenner, M. Jimenez, J. Kirk & W. Leo Grande (Eds.), *A contemporary Cuba reader.* (pp. 1-24). New York: Rowman & Littlefield Publishers.

Brown, L., S. Postel, & C. Flavin. (1992). From growth to sustainable development. In Goodland, R., H. Daly & S. Serafy, (Eds.). *Population, technology and lifestyle.* (pp. 119-127). Washington, D.C.: Island Press.

Brown, L., C. Falvin & S. Postel (1991). *Saving the planet.* The Worldwatch Environmental Alert Series. New York: W. W. Norton & Company.

Brundenius, C. (1984). *Revolutionary Cuba: The challenge of economic growth with equity.* London: Heinemann Educational Books.

Cahill, M. (2002). Diminishing returns to GDP and the Human Development Index. *Applied economics letters, 9,* 885-887.

Caldwell, J. (1986). Routes to Low Mortality in Poor Countries. *Population and Development Review, 12 (2),* 171-220

Cameron, J. (2000). Amartya Sen on economic inequality: The need for an explicit critique of opulence. *Journal of international development, 12, 1031-1045.*

Castro, F. (1953). History will absolve me. (Online). Retrieved April 15, 2010, from http://www.marxists.org/history/cuba/archive/castro/1953/10/16.htm

Chakraborty, A. (2005). Kerala's changing development narratives. *Economic and political weekly, 40(6),* 541-547.

Clapp, J. & P. Dauvergne. (2005). *Paths to a green world: the political economy of the global environment.* Cambrigde: MIT Press.

Cole, K. (1998). *Cuba. From revolution to development.* London: Pinter.

Comité Estatal de Estadísticas. (1989). *Anuario estadistico de Cuba.* Habana: Editorial Estadistica.

Comité Estatal de Estadísticas. (1984). *Anuario estadistico de Cuba.* Habana: Editorial Estadistica.

Comité Estatal de Estadísticas. (1979). *Anuario estadistico de Cuba.* Habana: Editorial Estadistica.

Comité Estatal de Estadísticas. (1974). *Anuario estadistico de Cuba.* Habana: Editorial Estadistica.

Comité Estatal de Estadísticas. (1969). *Anuario estadistico de Cuba.* Habana: Editorial Estadistica.

Cooper, S., J. Kennelly & P. Ordunez-Garcia. (2006). Health in Cuba. International *Journal of Epidemiology, 35,* 817–824.

Daly, H. (1991). *Steady-state economics* (2nd ed.). Washington DC: Island Press.

Daly, H. (1992). From empty-world economics to full-world economics: Recognizing an historical turning point in economic development. *TOES/Americas 9,* 1-4

Daly, H. (1993). Introduction to essays toward a steady-state economy. In H. Daly, & K. Townsend (Eds.), *Valuing the earth.* (pp. 11-50). Cambridge, MA: Massachusetts Institute of Technology.

Daly, H. (1996). *Beyond growth.* Boston: Beacon Press.

Das, K. (2007). The changing scenario of medical practice and health care delivery in South Kerala over the previous five decades. In C. Kartha (Ed.), *Kerala fifty years and beyond.* (217-236). Thiruvananthapuram, India: Goutha Books.

Dasgupta, A. (1996). *Gandhi's economic thought.* London: Routledge.

Deneulin, S. (2009). Ideas related to human development. In S. Deneulin & L. Shahani (Eds.), *An introduction to the human development and capability approach.* (pp. 49-70). United Kingdom: Earthscan.

Deneulin, S. & L. Shahani. (2009). A normative framework for development. In S. Deneulin & L. Shahani (Eds.), *An introduction to the human development and capability approach.* (pp. 3- 21). United Kingdom: Earthscan.

Diaz-Briquets, S. & J. Perez-Lopez. (2005). Environmental implications of Cuba's development strategy during the Special Period. In Romero, A. & S. West. (Eds.), *Environmental issues in Latin America and the Caribbean.* Dordrecht, The Netherlands: Springer. 267-294.

Diaz-Briquets, S. & J. Perez-Lopez. (2000). *Conquering nature : The environmental legacy of socialism in Cuba.* Pittsburgh: University of Pittsburgh Press.

Diaz-Briquets, S. (2002). Cuba's future economic crisis: the aging population and the social safety net. *Cuba in transition,* 400-409.

Diaz-Briquets, S. (1983). *The health revolution in Cuba.* Austin: University of Texas Press.

Direcccion Central de Estadistica. (1964). *Boletín estadistico de Cuba.* Havana.

Dominguez, M. (2009). Cuban social policy: Principal spheres and targeted social groups. *Latin American perspectives, 36,* 81-94.

Donate-Armada, R. (2001). The aging of the Cuban population. *Cuba in transition,* 481-488.

Dormont, B., M. Grignon & H. Huber. (2006). Health expenditure growth: Reassessing the threat of ageing. *Health economics, 15,* 947-963.

Duvvury, N. (1994). *Social security in the unorganised sector: A study of labour welfare funds.* Thiruvananthapuram.

Eckstein, S. (1994). *Back from the future: Cuba under Castro.* Princeton: Princeton University Press.

Egger, G. (2009). Health, 'illth,' and economic growth. *American journal of preventative medicine, 37(1),* 78-83.

Ekbal, B. (2007). Kerala health from success to crisis. In C. Kartha (Ed.), *Kerala fifty years and beyond.* (279-289). Thiruvananthapuram, India: Goutha Books.

Ehrlich, P & Holdren, J. (1971). Impact of population growth. *Science., 171,* 1212-1217.

Etzioni, A. (2003). Introduction. In D. Doherty & A. Etzioni (Eds.), *Voluntary simplicity.* (pp. 1-25). Oxford: Rowman & Littlefield Publishing Group, Inc.

Fic, T. & C. Ghate. (2005). The welfare state, thresholds and economic growth. Economic modelling, 22, 571-598.

Franke, R. & B. Chasin. (1994). *Kerala: Development through radical reform.* (Second Edition). New Delhi: Promilla & Co. Publishers in collaboration with The Institute for Food and Development Policy.

Fryatt, R., A. Mills & A. Nordstrom. (2010). Financing of health systems to achieve the health Millennium Development Goals in low-income countries. *Lancet, 375, 419-426.*

Gandhi, M. (1962). *Village swaraj.* Ahmedabad, India: Navajivan Press.

Gandjour, A. (2009). Aging disease – do they prevent preventative health care from saving costs? *Health economics, 18,* 355-362.

Garnier, L., R. Grynspan, R. Hidalgo, G. Monge & J. Trejos. (2000). Costa Rica: Social development and heterodox adjustment. In Mehrotra, S. & R. Jolly. (Eds.), *Development with a human face.* (pp. 355-383). New York: Oxford University Press.

Gasper, D. (2008). From 'Hume's law' to problem- and policy-analysis for human development. Sen after Dewey, Myrdal, Streeton, Stretton and Haq. *Review of political economy, 20 (2), 233-256.*

Gasper, D. (2007). Adding links, adding persons and adding structures: Using Sen's frameworks. *Feminist economics, 13 (1), 67-85.*

Gasper, D. (2002). Is Sen's Capability Approach an adequate basis for considering human development? *Review of political economy, 14(4), 435-461.*

George, A. & Nair, S. (2004). An overview of the health scenario of Kerala. In B. Prakash (Ed.), *Kerala's economic development* (Second Edition). (pp. 319-334). New Delhi: Sage Publications.

George, K. (1999). *Limits to Kerala model of development.* Paper. Thiruvanthapuram, India: Center for Development Studies.

George, K. (1993). Limits to Kerala model of development. Monograph series. Center for Development Studies: Thiruvananthapuram.

Georgescu- Roegen, N. (1993). The entropy law and the economic problem. In H. Daly & K. Townsend (Eds.), *Valuing the earth.* (pp. 75-88). Cambridge, MA: Massachusetts Institute of Technology.

Ghai, D. (2000). Social development and public policy: Some lessons from successful experiences. In Ghai, D. (Ed.). *Social development and public policy. A study of some successful experiences.* (pp. 1-45). In association with United Nations Research Institute for Social Development. London: Macmillan Press.

Global Footprint Network. (2007). *Humanity's footprint 1961-2002.* Retrieved February 12, 2008, from, http://www.footprintnetwork.org/gfn_sub.php?content=global_footprint

Goicoechea-Balbona, A. & E Conill-Mendoza. (2000). International indlussiveness: Publicising Cuba's development of the 'good life'. *International social work, 43 (4),* 435-451.

Gondar, A & E. Negrin. (2000). Aging in Cuba: Realities and challenges. *Cuban medical research 2(1).*

Gottron, F. (2001). Energy Efficiency and the Rebound Effect: Does Increasing Efficiency Decrease Demand? CRS Report RS20981 for Congress. (Online). Retrieved March 18, 2008, from, http://www.ncseonline.org/nle/crsreports/energy/eng-80.cfm?&CFID=11262148&CFTOKEN=7028302

Goulet, D. (1996). Authentic development: Is it sustainable? In D. Pirages (Ed.), *Building sustainable societies. A blueprint for a post-industrial world.* (pp. 189-205). London: M.E. Sharpe.

Government of Bhutan. (2005). *Bhutan national human development report 2005.* Thimphu: Government of Bhutan.

Government of Kerala, State Planning Board. (2006). *Human development report 2005.* Thiruvanathapuram.

Graham, H. (2001). From science to policy: options for reducing health inequalities. In D. Leon & G. Watt (Eds.), *Poverty, inequality and health.* (pp. 294-311). Oxford: Oxford University Press.

Granados, J. & E. Ionides. (2008). The reversal of the relation between economic growth and health progress: Sweden in the 19th and 20th centuries. *Journal of health economics, 27, 544-563.*

Griffin, K. & T. McKinnley. (1994). *Implementing a human development strategy.* London: Macmillan.

Gulati, L. & S. Rajan. (1999). Elderly in India and Kerala. *Economic and political weekly, 34(44),* WS46-WS51.

Gupta, I. & A. Mitra (2004). Economic growth, health and poverty: An exploratory study for India. *Development policy review, 22(2), 193-206.*

Gwatkin, D. (2001). Poverty and inqualities in health within developing countires: Filling the information gap. In D. Leon & G. Watt (Eds.), *Poverty, inequality and health.* (pp. 217-246). Oxford: Oxford University Press.

Haddad, L., H. Alderman, S. Appleton, L. Song & Y. Yohannes. (2003). Reducing child malnutrition: How far does income growth take us? *The World Bank economic review, 17 (1), 107-131.*

Halliburton, M. (1998). Suicide: A paradox of development in Kerala. *Economic and political weekly, 33 (36/37),* 2341-2345.

Hall, J. & R. Taylor. (2003). Health for all beyond 2000: the demise of the Alma-Ata Declaration and primary health care in developing countries. *MJA, 178, 17- 20.*

Haq, M. (1994). Foreword. Griffin, K. & T. McKinnley (Au.), *Implementing a human development strategy.* (pp. vii-ix). London: Macmillan.

Haq, M. (2000). *Reflections on human development.* (Expanded Edition). New Delhi: Oxford University Press.

Harriss, J. (2002). *Depoliticising development: The World Bank and social capital.* London: Athem Press.

Heller, P. (1994). *The politics of redistributive development: Class and state in Kerala, India.* Doctoral dissertation. University of California at Berkely.

Herring, R. (1983). *Land to the tiller.* London: Yale University Press.

Hirschfeld, K. (2007). *Health, politics and revolution in Cuba since 1898.* New Jersey: Transaction Publishers.

Hopkins, S. (2006). Economic stability and health status: Evidence from East Asia before and after the 1990s economic crisis. *Health policy, 75, 347-357.*

International Bank for Reconstruction and Development (IBRD)/ The World Bank. (2008). *Global monitoring report 2008: MDGs and the Environment.* Washington: The World Bank.

Jeromi, P. (2003). What ails Kerala's economy: A sectoral exploration. *Economic and political weekly, 38 (16),* 1584-1600.

Jeromi, P. (2005). Economic reforms in Kerala. *Economic and political weekly, 40 (30),* 3267-3275.

Jevons, W. S. (1906). *The coal question. An inquiry concerning the progress of the nation, and the probable exhaustion of our coal mines* (3rd ed.). A. W. Flux (Ed.). London: Macmillan Company.

Jolly, R. (2000). Profiles in success: Reasons for hope and priorities for action. In S. Mehrotra & R. Jolly (Eds.), *Development with a human face.* (pp. 3-20). Oxford: Oxford University Press.

Jolly, R. (2003). Human development and neo-liberalism: paradigms compared. In Fukada-Parr, S. & A. K. Shiva Kumar (Eds.), *Readings in human development.* (pp. 82-92). New Delhi: Oxford University Press.

Kannan, K., K. Thankappan, V. Ramankutty & K. Aravindan. (1991). *Health and Development in Rural Kerala: A Study of the Linkages Between Health Status and Socio-economic Status.* Integrated Rural Technology Centre, Kerala Sastra Sahitya Parishad: Kerala.

Kaul, I. (2003). Choices that shaped the Human Development Reports. In Fukada-Parr, S. & A. K. Shiva Kumar (Eds.), *Readings in human development.* (pp. 61-67). New Delhi: Oxford University Press.

Keating, D. (1999). Developmental health as the health of nations. In D. Keating & C. Hertzman (Eds.), *Developmental health and the wealth of nations.* (pp. 337-347). New York: The Guilford Press.

Kestemont, B., L. Frendo & E. Zaccai. (2006). Impacts sur l'environnement de l'Europe de l'Ouest et de l'Afrique de l'Ouest : essai de comparaison sur la base d'indicateurs. In G. Froger (Ed.), *La mondialisation contre le développement durable?* (pp. 73-100). Brussels : P.I.E. Peter Lang.

Kjellen, B. (2008). *A new diplomacy for sustainable development. The challenge of global change.* New York: Routledge.

Korton, D. (1994). Sustainable development strategies: the people-centered consensus. *Reflections on SID's 21st world conference.* (Online). Retrieved February 10, 2010 from, http://www.pcdf.org/1994/CONFEREN.htm

Krishnan, T. (2000). The route to social development in Kerala: Social intermediation and public action. In S. Mehrotra & R. Jolly (Eds.), *Development with a human face.* (pp. 204-234). Oxford: Oxford University Press.

Kurup, K. (1988). *Modern Kerala. Studies in social and agrarian relations.* Delhi: Mittal Publications.

Kumar, S. (1979). *Impact of subsidized rice on food consumption and nutrition in Kerala.* Research Report 5. International Food Policy Research Institute.

Kunhikannan, T. & K. Aravindan. (1996). Family health expenditure after liberalisation: Kerala experience. *Economic and political weekly, 31 (2/3),* 85-87.

Kunhikannan, T. & K. Aravindan. (2000). Changes in the health status of Kerala 1987-1997. Discussion paper no 20. Thiruvanthapuram, India: Center for Development Studies.

Kuonqui, C. (2006). Is Human Development a new paradigm for development? Capabilities approach, neoliberalism and paradigm shifts. Paper presented at the August 2006 international conference *Freedom and Justice* of the Human Development and Capability Association (HDCA). Groningen, Netherlands.

Kutty, R. (2007). Health policy and reform in Kerala. In C. Kartha (Ed.), *Kerala fifty years and beyond.* (289-306). Thiruvananthapuram, India: Goutha Books.

Kutty, V. (2000). Historical analysis of the development of health care facilities in Kerala State, India. *Health policy and planning 15(1),* 103-109.

Kutty, V. (2006). The Kerala health model: Time for re-assessment. In J. Tharamangalam (Ed.), *Kerala the paradoxes of public action and development.* (pp. 295-312). New Delhi: Orient Longman Private Limited.

Latouche, S. (1992). Standard of living. In W. Sachs (Ed.), *The development dictionary.* (pp. 250-263). Johannesburg: Witwatersrand University Press.

Levesque, J-F., S. Haddad, D. Narayana & P. Fournier. (2007). Affording what's free and paying for choice: Comparing the cost of public and private hospitalizations in urban Kerala. *International journal of health planning and management, 22,* 159-174.

Levitt, K. (2005). *Reclaiming development. Independent thought and Caribbean community.* Kingston: Ian Randle Publishers.

Levya, R. (1972). Health and revolution in Cuba. In R. Bonachea & N. Valdes (Eds.), *Cuba in revolution.* (pp. 456-496). New York: Anchor Books.

Lieten, g. (2002b). The human development puzzle in Kerala. *Journal of contemporary Asia, 31(1),* 47-68.

Luken, R. & F. Van Rompaey. (2007). *Environment and industry in developing countries.* United Nations Industrial Development Organisation. Northampton: Edward Elgar.

MacDonald, T. (1999). *A developmental analysis of Cuba's health care system since 1959.* New York: Edwin Mellen Press.

Martinez-Alier, J. (2009). Socially sustainable economic de-growth. *Development and change,* 40 (6), 1099-1119.

Matthews, H. (1975). *Revolution in Cuba.* New York: Charles Scribner's Sons.

McLaren, D. (2003). Environmental space, equity and the ecological debt. In J. Agyeman, R. Bullard & B. Evans. (Eds.), *Just sustainabilities. Development in an unequal world.* (pp. 19-37). London: Earthscan Publications.

McTavish, D. & Loether, H. (2002). *Social science research: An evolving process.* (Second Edition). Toronto: Allyn & Bacon.

Meadows, D., D. Meadows, J. Randers & W. Beherens III. (1972). *The limits to growth.* New York: Potomac Associates Book.

Mehrotra, S. (2000a). Social development in high achieving countries: common elements and diversities. In Mehrotra, S. & R. Jolly. (Eds.), *Development with a human face.* (pp. 21-62). New York: Oxford University Press.

Mehrotra, S. (2000b). Human development in Cuba: Growing risk of reversal. In Mehrotra, S. & R. Jolly. (Eds.), *Development with a human face.* (pp. 384-417). New York: Oxford University Press.

Mehrotra, S. (2000c). Health and education policies in high achieving countries: some lessons. In Mehrotra, S. & R. Jolly. (Eds.), *Development with a human face.* (pp. 63-110). New York: Oxford University Press.

Mencher, J. (1980). The lessons and non-lessons of Kerala: Agricultural labourers and poverty. *Economic and political weekly, 15 (41/43),* 1781-1802.

Mesa-Lago, C. (1981). *The economy of socialist Cuba.* Albuquerque: University of New Mexico Press.

Mesa-Lago, C. (1993). The economic effects on Cuba of the downfall of Socialism in the USSR and Eastern Europe. In C. Mesa-Lago (Ed.), *Cuba after the Cold War.* (pp.133-196). Pittsburgh: University of Pittsburgh Press.

Michael, E. & B. Singh. (2003). Mixed signals from Kerala's improving health status. *The journal of the royal society for the promotion of health, 123 (1),* 33-38.

Mill, J. S. (1965). *Principles of political economy.* Robson, J.M. (Ed). Book IV, Influence of the progress of society on production and distribution. Toronto: University of Toronto, pp. 752-757.

Ministerio de Salud Pública. (2009). *Anuario Estadistico de Salud 2009.* Havana: Gobierno cubano.

Miyar, J. (2010). Limited financial resources need not mean poor health outcomes. *MEDICC Review, 12 (3), 17-19.*

Moore, J. (2009). Ecology and the accumulation of capital. (Online). Retrieved March 13, 2010, from http://jasonwmoore.com/uploads/Moore_Ecology_and_Accumulation_Neoliberalism_5_October_2009_.pdf

Myers, D. (2003). Wealth and happiness: A limited relationship. In D. Doherty & A. Etzioni (Eds.), *Voluntary simplicity.* (pp. 41-51). Oxford: Rowman & Littlefield Publishing Group, Inc.

Nair, B. (1994). *Social development and demographic changes in South India.* New Delhi: MD Publications Pvt Ltd.

Nambiar, A. & K. Suchetha Kumari. (2002). *New horizons in co-operation: The health care co-operatives of Kerala.* Kannur, India: Malabar Institute for Development Research.

Nayeri, K. (1995). The Cuban health care system and factors currently undermining it. *Journal of Community Health, 20 (4),* 321-334.

Neumayer, E. (2010). Human development and sustainability. *Human development research paper 2010/05.* United Nations Development Program.

Newman, W. (2006). *Social research methods. Qualitative and quantitative approaches.* (Sixth Edition). Boston: Pearson Education Inc.

Noorbakhsh, F. (1998). A Modified Human Development Index. *World Development, 26 (3), 517-528.*

Nussbaum, M. (2000) *Women and human development,* Cambridge: Cambridge University Press.

Omvedt, G. (2006). Kerala is part of India: The Kerala model of development, Dalits and globalisation. In J. Tharamangalam (Ed.), *Kerala the paradoxes of public action and development.* (pp188-214). New Delhi: Longman Press.

Orr, D. (2004). *Earth in mind* (10th Anniversary ed.). Washington: Island Press.

Panikar, G. (1999). *Health transition in Kerala.* Kerala research program on local level development. Thiruvananthapuram. Discussion paper.

Panikar, G. (1979). Resources Not the Constraint on Health Improvement: A Case Study of Kerala. *Economic and Political Weekly, 14 (44),* 1803-1809.

Panikar, P. & C. Soman. (1984). *Health status of Kerala: The paradox of economic backwardness and health development.* Paper. Center for Development Studies: Thiruvananthapuram.

Parayil, G. (2000). Introduction. In G. Parayil (Ed.), *Kerala. The development experience.* (pp.1-15). London: Zed Books.

Parayil, G. (1996). The 'Kerala model' of development: development and sustainability in the Third World. *Third World Quarterly, 17(5),* 941-957.

Perez, C. (2008). *Caring for them from birth to death.* Plymouth, UK: Lexington Books.

Pierterse, J. (2000). After post-development. *Third world quarterly, 21 (2),* 175-191.

Ponting, C. (1993). *A green history of the world. The environment and the collapse of great civilisations.* New York: St. Martin's Press Inc.

Prieto, M. (2000). Social effects of economic adjustment: equality, inequality and trends toward greater complexity in Cuban society. In J. Dominguez, O. Villanueva, & L. Barberia (Eds.), *The Cuban economy at the start of the twenty-first century.* (pp. 209-243). Cambridge: Harvard University Press.

Price, N. & K. Hawkins, (2005). The peer ethnographic method for health research: Methodolgical and theoretical reflections. In J. Holland & J. Campbell (Eds.), *Methods in development research.* (pp. 149-161). Warwickshire, United Kingdom: ITDG Publishing.

Radhakrishnan, P. (1989). *Peasant struggles, land reforms and social change. Malabar, 1836-1982.* London: Sage Publications.

Raj, K. & M. Tharakan. (1983). Agrarian reform in Kerala and its impact on the rural economy – a preliminary assessment. In A. Ghose (Ed.), *Agrarian reform in contemporary developing countries.* (pp. 31-90). New York: Saint Martin's Press.

Ramachandran, V. (2000). Human development achievements in an Indian state: A case study of Kerala. In Ghai, D. (Ed.). *Social development and public policy. A study of some successful experiences.* (pp. 46-102). In association with United Nations Research Institute for Social Development. London: Macmillan Press.

Ramachandran, V. (1996). On Kerala's development achievements. In J. Dreze & A. Sen (Eds.), *Indian development.* (pp. 205-356). Oxford: Oxford University Press and World Institute for Development Economics Research of the United Nations University.

Ranis, G. (2004). Human development and economic growth. Economic Growth Center, Yale University. Center Discussion Paper No. 887.

Ranis, G. & S. Kosack. (2004). Growth and human development in Cuba's transition. Miami: Institute for Cuban and Cuban-American Studies, University of Miami.

Ranis, G. & F. Stewart. (2000). Strategies for success in human development. *Journal of human development* 1(1), 49-69.

Ranis, G. & F. Stewart. (2004). Economic growth and human development in Latin America. *CEPAL Review,* 78, 7-23.

Ranis, G. & F. Stewart. (2007). Dynamic links between the economy and human development. In J. Ocampo, K. Jomo & S. Khan (Eds.). *Policy matters: Economic and social policies to sustain equitable development.* (pp. 32-52). United Kingdom: Zed Books.

Ranis, G., F. Stewart & E. Samman (2006). Human development: Beyond the Human Development Index. *Journal of human development and capabilities,* 7 (3), 323-358.

Ranis, G. & S. Kosack (2004). *Growth and human development in Cuba's transition.* Miami: Institute for Cuban and Cuban American Studies, University of Miami.

Rao, G. (2000). *Fiscal decentralization in Indian federalism.* Paper. Bangalore: Institute for Social and Economic Change.

Rigg, J. (2006). Data from international agencies. In V. Desai & R. Potter (Eds.), *Doing development research.* (pp. 282-294). London: Sage Publications.

Roemer, M. (1976). *Cuban health services and resources.* Washington: Pan American Health Organisation and the World Health Organisation.

Sachs, W. (2007). Global challenges: Climate chaos and the future of development, in *Institute of development Studies Bulletin,* 38 (2), 36-39.

Sachs, W. (1999). *Planet dialectics: Explorations in environment and development.* Halifax: Fernwood Publishers.

Sadanandan, R. (2001). Government health services in Kerala: Who benefits? *Economic and political weekly, 36 (32),* 3071-3077.

Sainsbury, B. (2005). Cuba, health without wealth. *The ecologist,* 35 (5), 50-55.

Saney, I. (2004). *Cuba. A revolution in motion.* Black Point, Nova Scotia: Fernwood Publishing.

Sandbrook, R., M. Edelman, P. Heller & J. Teichman (2007). *Social democracy in the global periphery.* Cambridge: Cambridge University Press.

Santanya, S. (1990). Whither Cuban medicine? Challenges for the next generation. In S. Halebsky & J. Kirk (Eds.), *Transformation and struggle: Cuba faces the 1990s.* (pp. 251-270). New York: Praeger.

Sathyamurthy, T. (1985). *India since independence.* Volume One. Center-State relations: the case of Kerala. Delhi: Ajanta Publications.

Savvidas, A. & T. Stengos. *Human capital and economic growth.* California: Stanford University Press.

Scott, J. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed.* New Haven: Yale University Press.

Schofield, D. (1988). Managing primary health care in developing countries. *Journal of management in medicine,* 3(2), 107-117.

Schneider, E.D. & J. J. Kay. (1995). Order from disorder: The thermodynamics of complexity in biology. In M. Murphy & L. O'Neill (Eds.), *What is Life: The Next Fifty Years. Reflections on the Future of Biology.* (pp. 161-172). Cambridge: Cambridge University Press.

Schor, J. (2003). The problem of over-consumption—Why economists don't get it. In D. Doherty & A. Etzioni (Eds.), *Voluntary simplicity.* (pp. 65-82). Oxford: Rowman & Littlefield Publishing Group, Inc.

Schrank, A. (2006). Essentials for the case study method. In E. Perecman & S. Curan (Eds.), *A handbook for social science field research.* (pp. 169-174). London: Sage Publications.

Schweitzer, A. (1987). The crisis of civilization and its spiritual cause. *The Philosophy of Civilization.* Prometheus Books, Amherst, NY. 85-93.

Sen, A. (2003 – A). Development as capability expansion. In Fukada-Parr, S. & A. K. Shiva Kumar (Eds.), *Readings in human development.* (pp. 2-16). New Delhi: Oxford University Press.

Sen, A. (2003 – B). Human capital and human capability. In Fukada-Parr, S. & A. K. Shiva Kumar (Eds.), *Readings in human development.* (pp. 35- 37). New Delhi: Oxford University Press.

Sen, A. (2001). Economic progress and health. In D. Leon & G. Watt (Eds.), *Poverty, inequality and health.* (pp. 333-345). Oxford: Oxford University Press.

Sen, A. (1999). *Development as freedom.* New York: Anchor Books.

Sen, A. (1996). Radical needs and moderate reforms. In J. Dreze & A. Sen (Eds.), *Indian development.* (pp.1-32). Oxford: Oxford University Press and World Institute for Development Economics Research of the United Nations University.

Sen, A. (1984). *Resources, values and development.* Oxford: Basil Blackwell.

Serageldin, I. (1996). Sustainability and the wealth of nations. First steps in an ongoing journey. *Environmentally sustainable Development studies and monographs series No. 5.* Washington D.C.: International Bank for Reconstruction and Development (the World Bank).

Seshamani, M. & A. Gray (2004). Ageing and health-care expenditure: The red herring argument revisited. *Health economics, 13,* 303-314.

Shiva, V. (2005). *Earth democracy.* Cambridge, Massachusetts: South End Press.

Sibbons, M. (1992). Health for all by the year 2000: the good example of Kerala? *Center for development studies.* University of Wales. Papers in international development, number 5.

Singer, P. (2002). *One world.* London: Yale University Press.

Spence, R. (2009) Economic growth. In S. Deneulin & L. Shahani (Eds.), *An introduction to the human development and capability approach.* (pp. 73-100). United Kingdom: Earthscan.

Spiegle, T. & A. Yassi (2004). Lessons from the margins of globalization: Appreciating the Cuban health paradox. *Journal of public health policy,* 25 (1), 85-110.

State Planning Board. (various years). *Kerala; An economic review.* Trivandrum: Government of Kerala Press.

State Planning Board (various years). *Economic review, Kerala.* Trivandrum: Government of Kerala Press.

Stewart, F. (2009). *Human development as an alternative paradigm.* UNDP. (Online). Retrieved December 8, 2009, from http://hdr.undp.org/en/media/stewart.pdf

Stewart, J. (2006). Housing and health in Havana, Cuba. *Journal of the royal society for the promotion of health, 126 (2),* 69-71.

Streeton, P. (2003). Shifting fashions in development dialogue. In Fukada-Parr, S. & A. K. Shiva Kumar (Eds.), *Readings in human development.* (pp. 68-81). New Delhi: Oxford University Press.

Subramanian, S., P. Belli & I. Kawachi (2002). The macroeconomic determinants of health. *Annual review public health,* 23, 287-302.

Surowiecki, J. (2005). Why getting more gadgets won't necessarily increase our well-being. *Technology review.* MIT. (Online). Retrieved March 14, 2008, from, http://www.technologyreview.com/Biotech/14091/

Suryanarayana, M. (2001). Economic reform versus food security: Kerala's Gordian knot. *Journal of international development, 13,* 239-253.

Szreter, S. (1997). Economic growth, disruption, deprivation, disease, and death: On the importance of the politics of public health for development. *Population and development review,* 23 (4), 693-728.

Thankappan, K. (2001). Some implications of globalization in Kerala. *Bulletin of the World Health Organisation, 79 (9),* 892-893.

Tharamangalam, J. (2004). *The perils of social development without economic growth: The development debacle of Kerala, India.* Retrieved January 19, 2010, from, http://www.infra.kth.se/courses/1H1142/Kerala_Paper_4.pdf

Tharamangalam, J. (2006). Understanding Kerala's paradoxes: The problematic of the Kerala model of development. In J. Tharamangalam (Ed.). *Kerala the paradoxes of public action and development.* (pp. 1-37). New Delhi: Orient Longman Private Limited.

Tharamangalam, J. & A. Reed (2009). Human development in theory and practice. In H. Veltmeyer (Ed.), *Tools for change: Handbook for critical development studies.*

Thomas, V. (2006). Kerala: A paradox or an incomplete agenda? In J. Tharamangalam (Ed.). *Kerala the paradoxes of public action and development.* (pp. 69-93). New Delhi: Orient Longman Private Limited.

Thoreau, H. (1992). *Walden and resistance to civil government* (2nd ed.). New York: W.W. Norton & Company.

Todaro, M. & S. Smith (2006). *Economic Development* (9th ed.). Essex, England: Pearson Education Limited.

Tornquist, O. (2000). The new popular politics of development: Kerala's experience. In G. Parayil (Ed.), *Kerala the development experience*. (pp116-138). London: Zed Books.

Trainer, F. (1985). *Abandon affluence!* London: Zed Books.

United Nations (1975). *Poverty, unemployment and development policy. A case study of selected issues with reference to Kerala*. New York: United Nations.

United Nations (2010). *The Millennium Development Goals report 2010*. United Nations.

United Nations Development Program (UNDP) (2009). *Human development report*. New York: UNDP.

UNDP (2006). *Human development report*. New York: UNDP.

UNDP (2003). *Human development report*. New York: UNDP.

UNDP (1998). *Human development report*. New York: UNDP.

UNDP (1996). Overview. *Human development report*. In Fukada-Parr, S. & A. K. Shiva Kumar (Eds.), *Readings in human development*. (pp. 279-290). New Delhi: Oxford University Press.

UNDP (1991). *Human development report*. New York: UNDP.

UNDP (1990). *Human development report*. New York: UNDP.

UNICEF & WHO (1975). Alternative approaches to meeting basic health needs in developing countries. V. Djukanovic & E. Mach (Eds.). Geneva: World Health Organisation.

UN News Centre (2010). UN report card on anti-poverty shows mixed picture of progress and obstacles. June 23, 2010, from http://www.un.org/apps/news/story.asp?NewsID=35113&Cr=mdg&Cr1=

United Nations Statistical Division (UNSTATS) (2010). Retrieved April 15, 2010, from http://unstats.un.org/unsd/snaama/resQuery.asp

United Nations Population Division (2008). *World Population Prospects: The 2008 Revision.* New York: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

Vagero, D. (2008). Closing the global health gap in a generation – how is it possible? *International journal of public health, 58,* 279-280.

Van Baal, P., T. Feenstra, J. Polder, R. Hoogenveen & W. Brouwer (2010). Economic evaluation and the postponement of health care costs. *Health economics.*

Varatharajan, D. (2004). Impact of fiscal crisis on public health services in Kerala. In B. Prakash (Ed.), *Kerala's economic development.* (Second Edition). (pp. 335-355). New Delhi: Sage Publications.

Varghese, T. (1970). *Agrarian change and economic consequences. Land tenures in Kerala 1850-1960.* Bombay: Allied Publishers.

Varman, R. & G. Kappiarath (2008). The political economy of markets and development: A case study of health care consumption in the State of Kerala, India. *Critical sociology,* 34 (1), 81-98.

Vazquez, J. & J. Valdes (2007). Social policies in Cuba within the context of development (1902-2002). In M. Riesco (Ed.), *Latin America. A new developmental welfare state model in the making.* (pp 282-323). United Nations Research Institute for Social Development. New York: Palgrave.

Victor, P. & G. Rosenbluth (2007). Managing without growth. *Ecological Economics 61,* 492- 504.

Wackernagel, M. & W. Rees (1997). Perceptual and structural barriers to investing in natural capital: Economics from an ecological footprint perspective. *Ecological Economics, 20,* 3-24.

Waitzkin, H. (1983). Health policy and social change: A comparative history of Chile and Cuba. *Social Problems, 31 (2),* 235-248.

Weaver, F., S. Stearns, E. Norton & W. Spector. (2009). Proximity to death and participation in the long-term care market. *Health economics, 18(8),* 867-883.

Weis, T. (forthcoming, July 2010). The Accelerating Biophysical Contradictions of Industrial Capitalist Agriculture. *Journal of agrarian change.*

Whiteford, L. & L. Branch. (2008). *Primary health care in Cuba.* New York: Rowman & Littlefield Publishers Inc.

World Bank. (2010). Data – Country Classification. (Online). Retrieved February 3, 2010, from, http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20420458~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html

World Bank. (2009). *World Development Indicators.*

World Bank. (2004). *Making services work for poor people.* World Development Report. Washington: The World Bank.

World Bank. (1993). *Investing in health.* World Development Report. Washington: The World Bank.

World Bank. (1992). Development and the environment: A false dichotomy. In *World Development Report 1992,* 25-43.

World Commission on Environment and Development. (1987). *Our common future.* Oxford: Oxford University Press.

World Health Organisation (WHO). (2010). *World health statistics 2010.* (Online). Retrieved June 19, 2010, from, http://www.who.int/whosis/whostat/EN_WHS10_Part2.pdf

WHO. (2010b). Social determinants of health. (Online). Retrieved July 19, 2010 from http://www.who.int/social_determinants/en/

WHO. (2009). *World health statistics 2009.* (Online). Retrieved March 15, 2010, from, http://www.who.int/whosis/whostat/2009/en/index.html.

WHO. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health.* Geneva: World Health Organisation.

WHO. (2000). *The world health report 2000. Health systems: Improving performance.* Geneva: WHO

WHO. (1984). *Intersectoral linkages and health development. Case studies in India (Kerala State), Jamaica, Norway, Sri Lanka and Thailand.* Geneva: WHO.

World Health Organisation Statistical Information System (WHOSIS). (2008). *Cuba.* Retrieved on April 21, 2010, from http://apps.who.int/whosis/data/

Zimbalist, A. & C. Brundenius. (1989). *The Cuban economy.* London: John Hopkins University Press.

Zweifel, P., S. Felder & M. Meiers. (1999). Ageing population and health care expenditure: A red herring? *Health economics, 8 (6),* 485-496.

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