Ascertaining Living Standards in Erstwhile Mysore, Southern India, from Francis Buchanan's *Journey* of 1800-01: An Empirical Contribution to the Great Divergence Debate*

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Abstract

India's position in the Great Divergence debate has remained tentative due to scanty data availability for the medieval and early modern periods. In the years 1800-01, Dr. Francis Buchanan conducted one of the first agricultural surveys in the erstwhile state of Mysore and its adjoining regions. His *Journey* contains a wealth of information, both quantitative and qualitative, which has not been studied systematically so far. This paper brings together the information scattered throughout his report to construct an aggregate welfare ratio in order to ascertain the overall living standard in Mysore at the turn of the nineteenth century, the eve of colonial intervention in the state. The results from this study have interesting and important implications for the Great Divergence debate.

La place de l'Inde dans le débat sur la Grande Divergence est encore incertaine en raison de la rareté des données disponibles pour le Moyen Âge et le début de l'époque moderne. Dans les années 1800-'01, Francis Buchanan mena l'une des premières enquêtes agricoles dans l'ancien Etat de Mysore et les contrées avoisinantes. Son Voyage contient de nombreuses données relatives à cette région, tant quantitatives que qualitatives, qui n'ont jamais fait l'objet d'études systématiques. Cet article réunit les informations disponibles dans son rapport afin de restituer un taux global de bien-être. Il s'agit de déterminer le niveau de vie moyen au Mysore au tournant du XIXᵉ siècle, à l'aube de l'intervention coloniale dans cet Etat. Les résultats de cette étude ont des implications importantes pour le débat sur la Grande Divergence.

Introduction

The ongoing debate on the Great Divergence between the West and the Rest has emerged from an effort to establish *when* living standards between nations began to take on distinctly different paths. Determining the period of divergence in living standards is crucial if we are to assert with any degree of conviction possible reasons for present inter-national economic disparities, i.e. *why* this divergence (Allen 2007). This paper is a small step towards establishing the *when* rather than investigating the *why* in this continuing debate. We say *small* step because it is a compilation of a few observations in a particular region, at a particular point of time, and from one particular source. Nonetheless, given the meagre quantity of data that have driven the debate, at least in so far as India is concerned, we consider this a significant empirical contribution to the Great Divergence debate.

The lack of historical Gross Domestic Product (GDP) data prompted some early scholars to use backward projections to derive per capita GDP estimates for developed and currently lagging countries at a certain point of time, or "initial period", say, 1750 (Kuznets 1965; Zimmerman 1962). Their studies concluded that inter-national economic inequalities observed in the more recent past were in fact prominent long before the industrial revolution. The empirical findings supported the claim that the superiority of the West, or more specifically Europe, must be sought in its deep structural advantages like race, culture and institutions rather than the industrial revolution or colonisation (Landes 1998; Alam 2006). However, limitations in these studies like GDP computations based on exchange rates rather than purchasing power parity and exclusion of underground and non-monetised components of the GDP, resulted in severe biases that underestimated the GDP of currently lagging nations in the initial period. When corrected for some of these biases the results were not quite the same; the developed countries were only marginally ahead of today's poor nations in the mid-eighteenth century (Bairoch 1981). The reasons for the Great Divergence would thus have to be found in late eighteenth to early nineteenth century history; this period coinciding with the industrial revolution and colonisation. This argument has been strengthened by more recent studies, collectively known as the revisionist or California School, which fix the timing of the Great Divergence to post-1800.[1]

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[1] Some of the important revisionist works are Parthasarathi (1998), Frank (1998), Bin Wong (1998), Lee and Feng (1999) and Pomeranz (2001).

We seem to be far from any consensus in this debate. By constructing a comparative image of living standards in the past using real wages, or the physical quantity of goods and services that a given nominal or money wage buys, Allen categorically asserts that the California School is "wrong" and that Northwest Europe had moved ahead of Asia some 50-300 years before 1800, between 1500 and 1750 (Allen 2008). Studer (2008), assessing international efficiency of grain markets, reached a similar definitive conclusion and argues to reject the claim of the California School that Asia had reached a similar stage of economic development as Europe before the late eighteenth or early nineteenth century. Broadberry and Gupta (2006) too found that the Great Divergence between Europe and Asia was already underway before 1800.

In the Great Divergence debate the position of India has been recognised as critical but scholarship on this topic has remained tentative nonetheless. The primary reason for this is the scantiness of the available data for various components of real wage. Allen (2005) has made a comparative study of (north) India and the West using data (for India) from published research of the 1970s (Desai 1972, 1978; Moosvi 1973), which in turn drew upon observations recorded in Abu'l Fazl's *Ain-i Akbari* (Jarrett 1949) during Mughal rule c. 1565 CE. Parthasarathi compiled grain wages of weavers in the eighteenth and nineteenth centuries utilising scattered observations from archival and other published sources to show that "South Indian labourers had higher earnings than their British counterparts in the eighteenth and nineteenth century and lived lives of greater financial security" (Parthasarathi 1998: 82). However, given the prominence of weavers' wages in his study, the generalisation of his findings to draw comparisons in overall living standards between England and India in the eighteenth and nineteenth centuries has been challenged by several researchers, including Anne Booth (2006) and Allen (2005).

This paper attempts to ascertain living standards in the erstwhile state of Mysore, southern India, at the turn of nineteenth century. The year 1800 was also the period of transition from indigenous rule to colonial intervention in Mysore. This date is particularly important from the point of view of the Great Divergence debate because it allows us to pose very specific questions. Were real wages in Mysore comparable to those in England and elsewhere in Europe just before colonial intervention? Or was the standard of living in Mysore (or more generally, India) lagging behind the West on the eve of colonisation?

As soon as the East India Company had a hand in the affairs of Mysore it commissioned three comprehensive surveys of the entire region; a topographical survey executed under Colin McKenzie, an agricultural survey led by Francis Buchanan[2] and another to collect natural data by Benjamin Heyne (Lewis 2001). In 1807 Buchanan published his report, which is referred to hereafter as the *Journey* (Buchanan 1999). The *Journey* contains a variety of data for standard of living computation, both quantitative and qualitative, which have not been comprehensively and systematically exploited so far.[3] Some of the variables identified are:

1. Nominal wage rates across occupations, including agricultural servants, seasonal labourers, weavers, quarry workers, farmers, iron smelters and shepherds;
2. Detailed description of consumption baskets across castes and occupations;
3. Price information on various commodities in the consumption basket;
4. The nature of work and work hours of labourers;
5. Occupational distribution of the population.

These data will be presented and analysed to compute real wages and draw inferences on the timing of the divergence in living standards between the West and India, with particular reference to the erstwhile state of Mysore. We begin our study with a brief note on the political situation prevailing in Mysore at the end of the eighteenth century and then introduce Buchanan's *Journey*, its nature and scope. Real wages, rather than per capita income or output, has come to be accepted as the most appropriate indicator of historical living standards in the Great Divergence debate. We closely follow Allen's method to compute real wages, or what he terms "welfare ratios", as a measure of living standards and review some of the findings on Indian living standards based on his method. The construction of a consumption basket is a crucial element in computation of real wages. We investigate information on consumption patterns found in the *Journey* to construct appropriate consumption baskets for the region before estimating

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[2] Francis Buchanan later took the name Hamilton and so is sometimes called Francis Hamilton or Francis Buchanan Hamilton. However, we retain his original name because the *Journey* was published under this name.
[3] Parthasarathi (1998) uses only a few observations from Buchanan's records.

real wages. The core of this paper is an exhaustive exploration of Buchanan's observations on prices, wages and incomes, which is augmented by the construction of an aggregate welfare ratio across occupational classes. From this an overall picture of living standards in pre-colonial India emerges which is quite different from what has been sketched for India so far. A deeper scrutiny of Buchanan's observations and comments challenges some of the *a priori* assumptions that have hitherto been made in the literature regarding the daily calorie requirement of agricultural workers and the actual quantity of grains that were thought to consume. These grain wages reported by Buchanan support our aggregate welfare ratio, confirming the validity of our computation and findings. Finally, the results obtained from our analysis are summarised in the context of the proposed objective of the study, which is essentially empirical in nature.

Mysore State in 1800

The year 1799 marked the end of indigenous rule over the state of Mysore with the defeat and killing of Tipu Sultan by the British at Srirangapatnam in the Fourth War of Mysore. Under an agreement between the British East India Company and the Wodeyars (former rulers of Mysore and adversaries of Tipu Sultan and his father, Hyder Ali), the young prince Mummadi Krishnaraja Wodeyar was reinstated to the throne in 1800. The British did not rule over Mysore directly but thereafter exerted a domineering influence over the administration and policies of the Wodeyar government. The year 1800 thus marks the beginning of the colonial era.

The war of 1799 was the final conflict in a long series of confrontations that Mysore witnessed throughout the later half of the eighteenth century with the Nizam of Hyderabad, the Nawabs of Arcot, the Marathas and the British. Economically, Mysore faced a condition typical of any war-ravaged country at the end of the Fourth War, with famine, destruction of property, abandonment of cultivation and migration of people to neighbouring regions. This obviously raises questions whether the computations of real wages in 1800 were typical of the region.[4] A close examination of Buchanan's and other records is required before making conclusive inferences. Geographically too the wars had taken a toll; over the course of the

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[4]   During war, nominal wage could have been high due to labour shortages. However, the impact on real wage would depend on price levels which may also be high in a war economy. The net effect is difficult to ascertain.
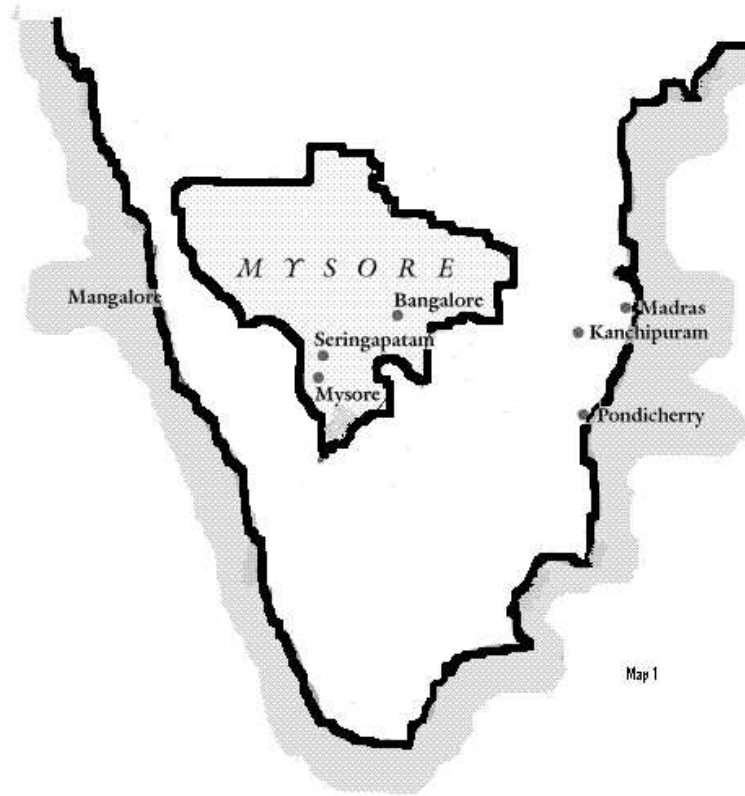
Map 1: The area under Wodeyar rule in 1800.

eighteenth century, the kingdom of Mysore had gradually been truncated under various treaties to a smaller part of its former glory. The boundaries of the area that came under Wodeyar rule in 1800 are shown in Map 1.

Buchanan's *Journey* of 1800-01

Under the instructions of the Governor General of India, Richard Cowley, Marquis of Wellesley (in office 1797-1805), Francis Buchanan traveled through many parts of southern India in one continuous stretch of some fourteen months, between 23 April 1800 and 5 July 1801. He meticulously collected information on a range of physical, political, cultural, social and economic subjects. His findings were published in the year 1807 in three volumes, totaling more than 1500 pages. The text of its title page

is reproduced below, because it states the purpose of the work, its geographical scope and a provides a short biography of Buchanan himself.

> A Journey from Madras through the Countries of Mysore, Canara, and Malabar, performed under the orders of the Most Noble the Marquis Wellesley , Governor General of India, for the express purpose of investigating the state of agriculture, arts, commerce; the religion, manners, and customs; the history natural and civil, and antiquities, in the dominions of the Rajah of Mysore, and the countries acquired by the Honourable East India Company, in the late and former wars, from Tippoo Sultaun. By Francis Buchanan, M.D. Fellow of the Royal Society, and of the Society of Antiquaries of London; Fellow of the Asiatic Society of Calcutta; and in the Medical Service of the Honourable Company of the Bengal Establishment. Published under the authority and patronage of the Honourable Directors of the East India Company. Illustrated by a map and numerous other engravings. In three volumes.

The *Journey* is important for several reasons. First, it is a survey and not a travelogue. The data, including wages of labourers and their conditions of work, was collected with a deliberate purpose. Buchanan was explicitly instructed by the Governor General to do so, with accuracy and care (Buchanan 1999: 1.vii-ix). Second, Buchanan's record was probably the first, but certainly the last first-hand account of *pre-colonial* Mysore. Third, Buchanan passed through more than 300 towns and villages in southern India. The geographical scope of the study makes it not only useful for drawing macro-level inferences, but also to check whether the data was spatially consistent. Fourth, Buchanan was well aware of the possible misinformation that he might obtain from people and officials. The precautions he took while acquiring data makes his study even more reliable and useful. For instance, at Srirangapatnam while assessing the output of grain per acre of land, he interviewed "three sensible farmers" while ensuring that "no revenue officer was present, nor did the field belong to any of the farmers" (ibid.: 1.100); a useful tip to any researcher. Finally, the timing of the *Journey* is perfect, both as an important moment in the political history of Mysore, as well as for the study of the Great Divergence.

I add one additional comment, at a more personal level, that I hope will not be out of place here. Over the last few years I have retraced parts of Buchanan's *Journey*.[5] The experience has left me fascinated by Buchanan's depth and range of observation. From descriptions of landscapes to iron smelting sites, from species of trees to myths and legends, Buchanan's

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[5] See for example, Sivramkrishna (2009).

record has turned out apposite. I can fully appreciate a remark made by one of India's most distinguished statisticians, P.C. Mahalanobis, on another of Buchanan's surveys in Bengal (north eastern India):

> The wealth and reliability of the information (so far as this can be judged from internal evidence) make the report one of the most remarkable surveys of all time. There is nothing in any subsequent survey in India to approach the one conducted by Buchanan 140 years ago (Bhattacharya and Roy 1977: 66).

There are historians who would, however, disagree with this standpoint. Foremost amongst them is Marika Vicziany who calls for "extreme caution" (Vicziany 1986: 660) in using the quantitative parts of his reports. On a more specific note, she complains that

> Buchanan's evidence about the daily life of artisans is irritatingly incomplete. *If there is good material here about wage rates*, this is rarely accompanied by information about all the other, equally important aspects of artisan life. Some artisans owned or cultivated land, but Buchanan does not tell us how much land was involved or how much income was generated by doing this. It is the lack of detail in Buchanan's descriptive accounts which must alert us to the limitations of the statistical tables"[6] (ibid.: 659-60).

Vicziany's advice that "we should be searching for additional sources to use as an alternative to, or at the very least as a way of cross checking, Buchanan's information" (ibid.: 660) is wise, but we see no reason to reject the wage data in Buchanan's *Journey*. On the contrary, not subjecting it to systematic study and analysis would be a waste of important and scarce information. Moreover, even if Buchanan's information on wages is indeed incomplete, it would only affect our standard of living computations to the extent that our outcomes would be too low, and the actual levels would have been higher.

Buchanan's south Indian survey included not only Mysore, but also Canara, Malabar,[7] small parts of British territory and Ceded Districts. However, we restrict the geographical scope of our study to erstwhile Mysore. This is because Mysore was a distinct political entity and because most parts of it belong to a well-defined agro-climatic zone characterised by a plateau and relatively low rainfall.

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[6] Emphasis my own; wage rates are coincidentally the most important variable for our study.

[7] The coastal high rainfall regions of Malabar and Canara are separated from Mysore by the Western Ghats.

Real Wage Computation and Allen's Welfare Ratio

Real wages are the physical quantity of goods and services that a given nominal or money wage can buy. The two elements required to compute real wage (w_r) are nominal or money daily wage (w_n) and price of a good (grain), p:

$$w_r = w_n/p \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

For instance, if w_n is 100 Rupees (hereafter Rs.) and the price of rice is Rs.20 per kg, then w_r or real wage is 5 kg of rice per day. In this example, the real wage is also called grain (rice) wage.

Allen's methodology (Allen 2008) to compare living standards is an extension of real wage as defined in equation (1) above to include not just a single grain but a basket of goods commonly consumed by a family. We can then compute a welfare ratio, R, where:

$$R = \frac{w_n \times \text{Days of work in a year}}{\text{Cost of maintaining a family for a year}} \quad \ldots. (2)$$

The cost of maintaining a family for a year is taken as the cost of a basket of goods for a year times three. The multiplier three is taken to be the quantity needed to feed a family of five, namely two adults and three children. This is a reasonable assumption for Buchanan too had assumed "five inhabitants to each house" while making an estimate of Srirangapatnam's population (Buchanan 1999: 1.76). A higher R indicates a better standard of living. Surpluses (R > 1), however, are usually assumed to be spent on better quality food, alcohol and meat rather than multiple baskets of the same goods.

Allen (2008) defines two types of consumption baskets, namely a "European respectability basket"[8] and a barebones "subsistence basket",[9] with the items and quantities as shown in Table 1 below.

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[8] Allen (2008) also defines the Mediterranean Respectability basket with wine instead of beer. However, we chose to ignore this specific consumption basket.

[9] This basket depends on the locally preferred grain consumed. Allen uses oats in Europe and sorghum in China.

Table 1: Allen's Consumption Baskets

	European Respectability Basket			Subsistence Basket		
	[a]	[b]	[c]	[a]	[b]	[c]
Bread/grain	182 kg	1223	50	156 kg	1453	48
Beans/peas	52 kg	160	10	40 kg	370	28
Meat	26 kg	178	14	5 kg	34	3
Butter	5.2 kg	104	0	3 kg	60	0
Cheese	5.2 kg	53	3			
Eggs	52	11	1			
Beer	182 lit	212	2			
Soap	2.6 kg			1.3 kg		
Linen	5 m			3 m		
Candles	2.6 kg					
Lamp Oil	2.6 lit					
Fuel	5.0 BTU			2.0 BTU		
Rent	4%			5%		
Total		**1941**	**80**		**1917**	**79**

Notes:

Columns [a], [d] = quantities per year

Columns [b], [e] = calories per day

Columns [c], [f] = proteins (grams) per day

Annual cost for family = cost of above basket × 3

Concerns about Real Wages as an Indicator of Standard of Living

The use of real wage or welfare ratio in exploring living standards is problematic. We identify two aspects pertaining to these concepts which must be addressed before we use it in this study; first, its computation and second, its relevance in drawing inter-regional or inter-national comparisons. Given below are some of the common concerns that arise in use of real wages in the Great Divergence debate:

1. Even if nominal wage rates are known, computation of real wages and welfare ratios requires knowledge of the number of working days in a year. If this information is not available, that introduces a degree of arbitrariness to the study;

2. When data is scarce, how do we know that the selected observation is not an outlier? The weaver whose nominal wage was recorded *may* have been a master weaver, not an "average" one;

3. There is also a strong possibility of spatial variation in wage rates; for instance, rural-urban differentials could make real wage comparisons weak;

4. Given that farming was the primary occupation in a medieval economy, how do we compute real incomes of farmers? Further, what were the inequalities in the distribution of land and other resources (ploughs, irrigation) between farmers?

5. Computation of real wage also requires information on prices of goods in the consumption basket. Are the recorded and/or selected prices typical, or could they have been outliers due to particular circumstances like seasonal variations, a local drought or scarcity driven by war?

6. Is the real wage of (say) an agricultural labourer or any particular occupation representative of living standards of the whole population? For instance, could a comparison of real wages of information technology (IT) workers in India and England tell us about differences in living standards between the two countries? In other words, is it "legitimate to draw conclusions on relative living standards in two complex societies on the basis of a comparison of wages of workers who may well have occupied a very different place in the overall income distribution in each economy?" (Anne Booth 2006: 5). To make realistic comparisons in living standards across regions we need knowledge of intra-regional disparities in real wages across occupations combined with estimates of occupational distribution of population.

For a country like India, where pre-colonial economic data is scarce, Buchanan's *Journey* is nothing less than a bonanza. The variables listed in the Introduction can be effectively used not only to compute real wages and welfare ratios but also answer some of the above concerns in ascertaining living standards of the region's population.

A Brief Summary of Real Wage Computations for India

Using welfare ratios, Allen (2007) found that prior to the industrial revolution, English and Dutch workers generally earned three to four times

subsistence basket levels (R = 3 to 4). At about this time, workers in India, China, south and central Europe lived close to a barebones subsistence basket level (R ∼ 1).

In their study of Chinese real wages, Allen *et al.* (2007) found that in the eighteenth century living standards in London and Amsterdam were higher than that in China. The latter was comparable to that of lagging parts of Europe, the Ottoman Empire, India and Japan. By the twentieth century even the backward parts of Europe show a divergence from Chinese living standards. The study concluded that Asia's performance was less optimistic that what the revisionists suggest (Allen *et al.* 2007: 4).

A similar conclusion was also arrived at by Broadberry and Gupta (2006) from their extensive study of wages and prices in Europe and Asia for the period 1500-1800. They assert their opposition to the California School claiming instead that the most advanced parts of Asia in 1800 were at the same level of development as stagnating parts of the European periphery.

In opposition to these results, in a study of weavers, Parthasarthi (1998) found that South Indian labourers in the eighteenth century had higher earnings than their British counterparts. This finding is one of the cornerstones of the California School. However, as pointed out earlier, the question remains whether a comparison of weavers is sufficient to generalise living standards across entire populations of two countries, in this case India and England.

The Consumption Basket in Mysore, c.1800

Most studies of real wages or welfare ratios have defined the Asian, and in particular, Indian consumption basket with rice as the staple grain. Allen (2007) considers Asians ate mostly rice. Parthasarathi too computes grain wages in South India "in terms of rice, the most highly *prized*[10] cereal" (Parthasarathi 1998: 83). Although he does recognise that "this may understate grain wages in South India, as labourers may have eaten more millet, which was cheaper and more nutritious than rice" (ibid.: 83), his computations were based on the latter since "millet prices are not available" (ibid.: 83).

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[10] Emphasis my own.

Based on Buchanan's *Journey* and current dietary habits of the people of the Mysore region, we propose two consumption baskets:

- A *ragi* basket, and
- A coarse rice basket

Ragi, or finger millet (*Eleusine coracana*), is the widely consumed grain in Mysore region. In fact, the diet of ragi *mudde* (balls made of ragi flour), ragi *roti* (ragi flat bread), ragi *dosa* (pancakes of ragi shallow fried in oil) and a curry with lentils and vegetables that Buchanan reported 200 years ago is commonly consumed even today in many parts of Karnataka, particularly the dry land plateau. The following passages from Buchanan establish the importance of ragi in the diet of the working classes:

> The crop of *Ragy* is by far the most important of any raised on dry field, and supplies all the lower ranks of society with their common food. Among them, it is reckoned the most wholesome and invigorating food for labouring people… (Buchanan 1999: 1.102)

> (Ragy) flour is dressed in various ways. The most common are, a kind of pudding called *Sangutty*, and two kinds of cakes, called *Ruty* and *Doshy*, both of which are fried in oil… (ibid.: 1.102)

Referring to lentils, Buchanan speaks of a curry, locally called *sambar*, which accompanies the staple grain meal:

> The green pods, and ripe grain, are both made into Curries, as usual here, by frying them in oil with tamarinds, turmeric, onions, capsicum, and salt… (ibid.: 1.95).

In addition to this quantity of grain, labourers may have also had substantial quantities of curds. At Piryapatana, Buchanan observed:

> The labouring servants of the farmers are here called *Jitagara*, or hired men. They eat once a day at their master's house… their diet consists of Ragy-flour boiled into a kind of porridge. The seasoning consists of a few leaves bruised with capsicum and salt, and boiled in a little water. It is only the rich that use oil or *Ghee* (boiled butter) in their diet. Milk is in such plenty, that the *Jitagara* may have as much *Tyre*, or sour curds, as they please (ibid.: 2.109)

Ghee (clarified butter) or butter then may not have been consumed by labourers as part of their day-to-day diet. However, we retain it in our

consumption basket so that we are able to draw comparisons with earlier studies of welfare ratios.

In some parts of the state, especially the north-central regions, *jola* or corn may have been the staple grain in the diet of labouring classes. At Harihar, Buchanan reports, "labourers feed upon Jola, or Ragy" (ibid.: 3.327).

Our proposed (daily) ragi or jola basket consists of the following:

500 gm ragi	Calories: 1640 kcal	Protein: 35 gm
100 gm lentils	Calories: 350 kcal	Protein: 25 gm
10 gm ghee or oil	Calories: 90 kcal	

To this we also add coarse cloth piece of 12 metre length × 0.8 metre width per year for use as a *sari* by women and *dhoti*[11] by men.

Rice, or in fact, boiled rice[12] was, and still is, consumed in the region by all castes, including labouring castes "as are able to procure it" (ibid.: 1.92). Buchanan's qualification tells us that though consumed by some labouring castes or classes, it may have been out of bounds for many. This, however, contradicts Allen's generalisation that rice was "the cheapest source of calories" (Allen 2005: 162) although in some districts with higher levels of rainfall and those with better irrigation facilities, coarse rice was the preferred grain in the diet of labouring classes.

We propose a (daily) coarse[13] rice basket which contains:

500 gm rice	Calories: 1640 kcal	Protein: 35 gm
100 gm lentils	Calories: 350 kcal	Protein: 25 gm
10 gm ghee	Calories: 90 kcal	
Coarse cloth (year)	12 m × 0.8 meters	

We have constructed two baskets; both essentially barebones subsistence baskets. As we will see, using each of these baskets yields significantly different welfare ratios and implications for standard of living. Generalisation of the staple grain as wheat in north and rice in south India is, therefore, inappropriate. Moreover, grains like ragi or jola were chosen by the people

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[11] Both the *sari* and *dhoti* are woven and unstitched pieces of cloth. The sari is draped around the body whereas the dhoti is wrapped around the waist.

[12] The *brahmin* caste do not consume boiled or par boiled rice.

[13] "Best" quality rice was also reported to be available by Buchanan, but the price is almost three times that of coarse rice.

not only because of their low cost but also a genuine belief in their nutritional superiority. As Buchanan observed:

> (The labourer) therefore very naturally concludes, that his usual fare is the most wholesome; while, for similar reasons, a labourer from another country will justly reprobate it. My Bengal and Madras servants, who have been accustomed to live upon rice, look upon Ragy as execrable food, and, in fact, would experience great inconvenience were they compelled to live upon it… (Buchanan 1999: 1.102).

Buchanan also noted that "the allowance of Jola is reckoned the most nutritious" (ibid.: 3.306).

The above barebones subsistence baskets, one with ragi and the other with coarse rice, are akin to Allen's Beijing (sorghum) subsistence basket. These subsistence baskets are incomplete and do not cover many essential items of day-to-day consumption like alcohol, fuel, sugar and so on. However, a welfare ratio of greater than 1 (R > 1) will indicate that families did have surpluses[14] for such items whereas an R ≤ 1 would tell us that families were living at subsistence level, close to poverty.

Cost of Consumption Baskets

We have converted all currencies into pre-decimal sterling or L-s-d (pounds-shillings-pence), as was usually reported by Buchanan. We have also taken all prices (ragi, coarse rice, lentils, ghee and coarse cloth) from Buchanan's records at Bangalore (ibid. 1999: 1.197).[15] Bangalore was a trading town and the question arises whether prices here were typical for the entire region. Based on reported prices of ragi and rice in smaller places like Harihar (ibid.: 3.316), Kellamangala (ibid.: 3.437) and Hiriyur (ibid.: 3.347), we feel that Bangalore prices can be considered as typical. The price comparisons per bushel are tabulated below in Table 2:

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[14] We should take these more as "order of magnitude" measurements. For example, R = 1.2 need not mean that a family had any substantial surplus. However, R = 6 (say) would more definitively mean more than a decent standard of living.

[15] Jola prices were not reported at Bangalore.

Table 2: Grain prices across locations (L-s-d per bushel)

	Bangalore	Harihar	Kellamangala	Hiriyur
Ragi	0-1-2	0-1-4	0-0-11	0-0-11.5
Jola	NA	0-1-4	NA	NA
Coarse Rice	0-2-9	0-2-8	NA	0-2-2

NA = data not available

The costs of a ragi and coarse rice basket are given below in pence (d) for a year and then multiplied by three, i.e. for a family of five persons which included two adults and three children.

Ragi Basket (year) in pence
500 gm ragi × 365 = 182 kg = 6.34 bushels   89
100 gm lentils × 365 = 40 kg = 1.4 bushels   23
10 gm ghee × 365 = 3.5 kg = 0.07 cwt.   35
Coarse cloth = 12 m × 0.8 meters   40
Total   187 × 3 = 561

Coarse Rice Basket (year) in pence
500 gm rice × 365 = 182 kg = 6.34 bushels   209
100 gm lentils × 365 = 40 kg = 1.4 bushels   23
10 gm ghee × 365 = 3.5 kg = 0.07 cwt   35
Coarse cloth = 12 m × 0.8 meters   40
Total   307 × 3 = 921

Prices of the goods taken for the above calculations pence/winter bushel (d/wb) are as follows:

Retail Price of ragi: 14 (ibid.: 1.197)
Retail price of clean (de-husked) rice: 33 (ibid.: 1.197)
Retail price of lentils/pulse (*huruli*):   35 (ibid.: 3.316)

The retail price of ghee per hundredweight (cwt) is 34.3 pence (ibid.: 1.197) and coarse cloth per 12 × 0.8 metre piece is 40 pence (ibid.: 1.221).

Computation of Welfare Ratios from Buchanan's *Journey*

We now present data collated from Buchanan's *Journey* for the erstwhile state of Mysore. Table 3 consists of the following information:—

Column 1: Reference serial number
Column 2: Volume and page number in *Journey* from which data has been taken
Column 3: Place name (current)
Column 4: Activity or occupation mentioned by Buchanan
Column 5: Occupation categorised more broadly as follows:

A:	agriculture, neither servant nor labourer
A-L-F:	agricultural labourers (female)
A-L-M:	agricultural labourers (male)
A-S-F:	agricultural servants (female)
A-S-M:	agricultural servants (male)
P-I:	proto industry (iron and steel)
P-Q-F:	proto industry (quicklime) female labourers
P-Q-M:	proto industry (quicklime) male labourers
P-S:	proto industry (stone)
P-W:	proto industry (weavers)
T:	tribal

Column 6: Basis of payment mentioned by Buchanan, i.e. daily, weekly, monthly or yearly.
Column 7: Number of working days, weeks or months considered for computation of welfare ratios.

Table 3: Compilation of occupations and working days from Buchanan's *Journey*

2.1	2.2	2.3	2.4	2.5	2.6	2.7
Ref. No.	Buchanan Ref.	Place Name	Occupation	Occupation classification	Unit (day, week, month, year)	Number of months or days of work
1	1.124	Srirangapatnam	Village Gauda (chief), non-hereditary	A	month	12
2	1.124	Srirangapatnam	Low caste servant of farmer within 2 miles of town	A-S-M	month	12

Table 3 (*cont.*)

2.1	2.2	2.3	2.4	2.5	2.6	2.7
Ref. No.	Buchanan Ref.	Place Name	Occupation	Occupation classification	Unit (day, week, month, year)	Number of months or days of work
3	1.125	Srirangapatnam	Male labour for harvest within 2 miles of town	A-L-M	day	240
4	1.125	Srirangapatnam	Female labour for transplanting rice within 2 miles of town	A-L-F	day	180
5	1.125	Srirangapatnam	Male labour for harvest within 6-7 miles of town	A-L-M	month	8
6	1.125	Srirangapatnam	Male labour for harvest further from town	A-L-M	month	8
7	1.133	Srirangapatnam	Good workers in stone	P-S	month	10
8	1.134	Srirangapatnam	Male labourer working for quicklime makers (*uparu*)	P-Q-M	day	240
9	1.134	Srirangapatnam	Female labourer working for quicklime makers	P-Q-F	day	240
10	1.175	Magadi	Labourers who collect sand + work at smelting house	P-I	month	12
11	1.175	Magadi	Labourers who makes charcoal	P-I	month	10
12	1.175	Magadi	Headworker at forging shop	P-I	month	10
13	1.175	Magadi	Labourer at forging shop	P-I	month	10
14	1.177	Magadi	Labourer to collect and prepare ore, charcoal makers	P-I	month	10
15	1.177	Magadi	Headworkman at smelting furnace	P-I	month	10
16	1.177	Magadi	Workmen at smelting furnace	P-I	month	10
17	1.177	Magadi	Hammerman at forging shop	P-I	month	10
18	1.177	Magadi	Bellowman at forging unit	P-I	month	10
19	1.177	Magadi	Headworkman at forging unit	P-I		10
20	1.212	Bangalore	Servant of master weaver (cotton cloth with silk borders)	P-W	day	320

Table 3 (*cont.*)

2.1	2.2	2.3	2.4	2.5	2.6	2.7
Ref. No.	Buchanan Ref.	Place Name	Occupation	Occupation classification	Unit (day, week, month, year)	Number of months or days of work
21	1.212	Bangalore	Servant of master weaver (silk)	P-W	day	320
22	1.212	Bangalore	Servants of Shaynagaru weavers	P-W	month	12
23	1.216	Bangalore	Servants of Padma and Samay Shalay weavers (fine work)	P-W	day	320
24	1.217	Bangalore	Servants of Padma and Samay Shalay weavers (coarse work)	P-W	day	320
25	1.218	Bangalore	Togotaru weavers making romals	P-W	day	320
26	1.298	Kolar	Batigaru servants of farmers	A-S-M	year	12
27	1.298	Kolar	Labourer (male)	A-L-M	day	240
28	1.298	Kolar	Labourer (female)	A-L-F	day	180
29	1.415	Sira	Batigaru servants of farmers (male)	A-S-M	month	12
30	1.415	Sira	Batigaru servants of farmers (female)	A-S-F	month	12
31	1.415	Sira	Labourer (male)	A-L-M	day	240
32	1.415	Sira	Labourer (female)	A-L-F	day	180
33	1.43	Malur	Yatam operator	A-L-M	day	240
34	2.108	Piryapatna	Male servant of farmer Jitagara (good)	A-S-M	year	12
35	2.108	Piryapatna	Male servant of farmer Jitagara (indifferent)	A-S-M	year	12
36	2.108	Piryapatna	Female servant of farmer Jitagara	A-S-F	year	12
37	2.12	Madhugiri	Wages of Goala's shepherds	A	year	12
38	2.126	Hejuru	Kadu Kurubaru tribal who watch fields of farmers for elephants and wild hogs	T	month	12
39	2.14	Hampapura	Charcoal maker	P-I	day	320
40	2.141	Hampapura	Miner for iron smelter	P-I	day	320
41	2.141	Hampapura	Washer of iron ore	P-I	day	320
42	2.141	Hampapura	Principal bellowman	P-I	day	320

Table 3 (*cont.*)

2.1	2.2	2.3	2.4	2.5	2.6	2.7
Ref. No.	Buchanan Ref.	Place Name	Occupation	Occupation classification	Unit (day, week, month, year)	Number of months or days of work
43	2.141	Hampapura	Inferior bellowman	P-I	day	320
44	2.19	Turuvekere	Lowest workman of iron smelter	P-I	month	10
45	2.22	Turuvekere	Workman's wages at smelting furnace	P-I	month	10
46	2.22	Turuvekere	Foreman's wages at smelting furnace	P-I	month	10
47	2.54	Chikkanayakanhalli	Workman for preparation of areca trees	A-S-M	year	12
48	3.281	Nagar	Servant of cultivator	A-S-M	year	12
49	3.298	Shimoga	Male servant of cultivator	A-S-M	year	12
50	3.298	Shimoga	Female labourer for weeding	A-L-F	day	180
51	3.298	Shimoga	Male labourer for weeding	A-L-M	day	240
52	3.317	Shimoga	Female spinner of coarse cloth	P-W	day	180
53	3.321	Basawanapatna	Servant's wage of brahman cultivator	A-S-M		12
54	3.321	Basawanapatna	Labourer (male)	A-L-M	day	240
55	3.321	Basawanapatna	Labourer (female)	A-L-F	day	180
56	3.349	Hiriyur	Male servant of cultivator	A-S-M	year	12
57	3.349	Hiriyur	Female labourer during harvest	A-L-F	week	27
58	3.363	Chikkabaylikere	Foreman at hob-nail works	P-I	day	320
59	3.363	Chikkabaylikere	Other workmen at hob-nail works	P-I	day	320
60	3.399	Belur	Male servant of cultivator	A-S-M	year	12
61	3.399	Belur	Male labourer of cultivator on monthly hire	A-S-M	month	8
62	3.399	Belur	Male labourer of cultivator on daily hire	A-S-M	day	240
63	3.428	Kankanhalli	Male servant of cultivator	A-S-M	year	12
64	3.428	Kankanhalli	Male labourer of cultivator	A-L-M	day	240

Table 3 (*cont.*)

2.1	2.2	2.3	2.4	2.5	2.6	2.7
Ref. No.	Buchanan Ref.	Place Name	Occupation	Occupation classification	Unit (day, week, month, year)	Number of months or days of work
65	3.428	Kankanhalli	Female labourer of cultivator	A-L-F	day	180
66	3.454	Kellamangala	Ploughman	A-S-M	year	12
67	3.455	Kellamangala	Male or female day labourer	A-L-M	day	240
68	2.90.	Mulro	Mussalman labourers (not acquainted with agriculture)	A-L-M	month	8
69	3.280.	Nagar	Male slave/servant of brahman cultivator	A-S-M	year	12
70	3.280.	Nagar	Female slave/servant of brahman cultivator	A-S-F	year	12

As mentioned above, the number of working days, weeks or months in a year used in the computation of real wages or welfare ratios brings in a degree of arbitrariness to the entire exercise. Though Buchanan specifically reports on work days or months for some occupations, he did not give any precise indication of the number of working days for agricultural *labourers* except for a small clue in his report from Shimoga; "this is their employment during the six months of toil" (ibid.: 3.298). In spite of this we have deliberately chosen the following as days or months of employment per year for agricultural labourers: men 240 days or eight months and women 180 days.[16] However, small odd jobs like house construction and transport of loads in bullock carts would have been possible during non-agricultural season. We, therefore, considered two additional months of employment for male labourers during a year. These figures are also based on our discussions with a few present-day landless wage labourers who said that usually agricultural work is available for six months in a year in non-irrigated areas

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[16] In one case weekly wage payments have been reported for women labourers. Here we have considered employment for 27 weeks.

with some small jobs available during the rest of the year.[17] For agricultural *servants*, Buchanan usually reports annual lumpsum wages, in cash or kind.

For proto-industries, the number of working days of servants and labourers has been taken as 320 or ten months. There are instances in iron smelting where Buchanan mentions employment for a slightly lesser period. However, we decided to standardise employment to ten months.[18] Some servants of weavers were paid on a daily basis although permanently retained by their proprietors; in these instances too we have taken the number of working days as ten months.

In Table 4, we begin with broad occupational categories as in Column 5 of Table 3 and list out the corresponding reference number (from column 2.1) for cross referencing of Table 3 and 4. Total money wages in pence including payments made in-kind are shown in column 3.3. The latter are converted into money terms using prices for each good listed in the previous section. Welfare ratios using ragi basket (R_g) and coarse rice basket (R_c) are computed and listed in Columns 3.4 and 3.5 respectively.

Table 4: Computation of ragi and rice basket welfare ratios

Occupation classification	Ref.No. (from Table 3)	Wage rate in d	Rg	Rc
A	37	541	0.96	0.59
A	1	1935	3.45	2.10
A-L-F	32	180	0.32	0.20
A-L-F	57	202	0.36	0.22
A-L-F	65	270	0.48	0.29
A-L-F	55	315	0.56	0.34
A-L-F	4	360	0.64	0.39
A-L-F	28	360	0.64	0.39
A-L-F	50	415	0.74	0.45

[17] We recognize that projecting present-day employment trends to the past is highly problematic; however, given the scarcity of labour c.1800 and the occupational mobility in pre-colonial India, it is well possible that people found gainful employment for more than this period. Our estimate can, therefore, be considered an underestimate or lower bound of real wage and living standards of agricultural labourers.

[18] As mentioned above, Vicziany (1986) also argues that workers in proto-industries like iron smelting often cultivated their own lands which meant additional sources of income.

Table 4 (*cont.*)

Occupation classification	Ref.No. (from Table 3)	Wage rate in d	Rg	Rc
A-L-M	68	256	0.46	0.28
A-L-M	64	360	0.64	0.39
A-L-M	31	480	0.86	0.52
A-L-M	5	512	0.91	0.56
A-L-M	6	512	0.91	0.56
A-L-M	51	700	1.25	0.76
A-L-M	27	720	1.28	0.78
A-L-M	54	780	1.39	0.85
A-L-M	3	818	1.46	0.89
A-L-M	67	1385	2.47	1.50
A-L-M	33	1560	2.78	1.69
A-S-F	36	360	0.64	0.39
A-S-F	30	384	0.68	0.42
A-S-F	70	398	0.71	0.43
A-S-M	35	291	0.52	0.32
A-S-M	66	330	0.59	0.36
A-S-M	34	373	0.66	0.40
A-S-M	63	377	0.67	0.41
A-S-M	61	384	0.68	0.42
A-S-M	56	450	0.80	0.49
A-S-M	60	480	0.86	0.52
A-S-M	49	504	0.90	0.55
A-S-M	47	520	0.93	0.56
A-S-M	26	557	0.99	0.60
A-S-M	62	600	1.07	0.65
A-S-M	69	650	1.16	0.71
A-S-M	53	717	1.28	0.78
A-S-M	29	768	1.37	0.83
A-S-M	2	960	1.71	1.04
A-S-M	48	1053	1.88	1.14
P-I	39	512	0.91	0.56
P-I	40	512	0.91	0.56

Table 4 (*cont.*)

Occupation classification	Ref.No. (from Table 3)	Wage rate in d	Rg	Rc
P-I	41	512	0.91	0.56
P-I	45	560	1.00	0.61
P-I	11	640	1.14	0.69
P-I	18	640	1.14	0.69
P-I	43	640	1.14	0.69
P-I	13	720	1.28	0.78
P-I	17	720	1.28	0.78
P-I	44	720	1.28	0.78
P-I	10	800	1.43	0.87
P-I	14	800	1.43	0.87
P-I	42	844	1.50	0.92
P-I	12	960	1.71	1.04
P-I	59	960	1.71	1.04
P-I	16	1040	1.85	1.13
P-I	46	1120	2.00	1.22
P-I	15	1200	2.14	1.30
P-I	19	1600	2.85	1.74
P-I	58	2000	3.57	2.17
P-Q-F	9	480	0.86	0.52
P-Q-M	8	1440	2.57	1.56
P-S	7	3220	5.74	3.50
P-W	52	306	0.55	0.33
P-W	24	960	1.71	1.04
P-W	25	1280	2.28	1.39
P-W	21	1920	3.42	2.08
P-W	22	1935	3.45	2.10
P-W	23	2160	3.85	2.35
P-W	20	2560	4.56	2.78
T	38	154	0.27	0.17

An Analysis of Welfare Ratios

We are able to derive several important insights into living standards in erstwhile Mysore c.1800 from Table 4. Excluding tribal watchmen (with R_g = 0.27), most agricultural workers have ragi basket welfare ratios between 0.5 and 1.5 ($0.5 < R_g < 1.5$). However, when we combine male and female workers, we find that agricultural servants and labourers have welfare ratios between one and 2.5 ($1 < R_g < 2.5$). This implies that when both husband and wife worked, families were able to raise themselves above barebones subsistence levels. The surplus would have probably been used to fund some non-essential consumption items. If we use rice as the staple grain, welfare ratios drop by almost 40%, which would have forced labouring class families to live at barebones subsistence levels with a coarse rice basket welfare ratio of close to one ($R_c \sim 1$).

The above results imply that the economic role of women is of critical importance in ascertaining living standards of rural labouring class families. Allen *et al.* (2007) assert that except for China, Asian women did not usually engage themselves in gainful agriculture activity. We, however, disagree. Not only did Buchanan regularly report wages for women servants and labourers, but there are several instances where he specifically comments on the hard work that women perform. For instance, at Madhugiri he observed,

> The labouring servants… lived in their own houses. The old women of their families live at home, cook, spin, take care of children, and do all domestic labour; the men, and their young wives, hire themselves out to the wealthy farmers… Pregnancy occasions scarcely any interruption in the labour of the women, who are very hardy (ibid.: 1.390).

At a small village, Taiuru, Buchanan reports that amongst a cultivating caste:

> …as the women are bought by their husbands, the men are unwilling to part with them, especially if they be good workers. The men buy as many wives as they can; for the women are very industrious, and assist even to support their husbands (ibid. 2.153).

Even "where women do no other work" (ibid.: 3.317), Buchanan mentions that they would spin cotton thread, which would give them a daily earning of 1.639d (reference no. 52 in Table 3). In India, where women

today constitute two-thirds of the workforce (Nanavaty 2003), ignoring the economic role of women in a family's overall welfare would make the results of any study deficient.

Some inferences can also be made about inequalities amongst labouring classes. In the case of agricultural labourers and servants, the gender-wise *intra- occupational* differential in standard of living was generally in the range of 1:3 with a maximum differential of 1:8.[19] In proto-industries like iron and steel smelting and forging and weaving, wage differentials between workers were also about 1:3.[20] The *inter-occupational* differential for male workers, however, is about 1:8, even if we keep out skilled stone workers.

With a ragi basket welfare ratio (R_g) of approximately 1.5 to 4, weavers had living standards at levels which may have been comparable to those in Europe. If instead of ragi we chose rice, which is likely to have been the staple grain of urban weavers, the welfare ratio (R_c) is in the range of one to 2.5, or $1 < R_c < 2.5$. Buchanan's *Journey*, therefore, does seem to support the findings of Parthasarthi (1998) who argued that grain wages of weavers in India were on par and sometimes higher than weavers in Europe. However, as can be seen in Table 4 above, wages in the proto-industries like weaving, iron smelting and stone work cannot be generalised across the entire working population, particularly agricultural workers. Parthasarathi himself pointed out that for Baramahal, a dry region adjoining Mysore to the south, "weavers were the most prosperous of the labouring groups" (Parthasarathi 2001: 15). Moreover, the possibility of wives of weaver servants engaging in paid work, as did their agricultural counterparts, would have a positive bearing on living standards of *families* in these communities.

Buchanan has provided caste-wise (occupational) distribution of the population for Canara, which we have compiled and aggregated in

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[19] The *yatam* (irrigation) operator could have been a seasonal job and wages may not have been paid over 240 days. We have also chosen to ignore the labourers at Kellamagala, whose wages seem unusually high. The wages of the Mussulman labourer was rather low because of his supposed inexperience of agricultural practices (Buchanan 1999: 2.90). In the case of male servants too, the yearly wages near Srirangapatnam and Nagar, both important urban areas, may not have been typical across the entire region. This also gives us a hint into urban-rural wage differentials.

[20] The wage of a labourer at the forging shop seems unusually low with $R_g = 0.51$. The R_g of female spinner of coarse cloth may also be excluded since this was a job carried out by women at home.

Table 5: Occupation-wise distribution of population and computation of aggregate welfare ratio

	Class-wise population (%)	Rg	Weighted average (Rg*)
Cultivators			
Small (25%)	0.09	2.9	0.26
Medium (50%)	0.17	7.68	1.31
Large (25%)	0.09	15	1.35
Daily wage agricultural laborers	0.01	0.815	0.01
Extractors of palm juice	0.14	5.63	0.79
Proto-industrial proprietors, merchants, etc.	0.12	8.5	1.02
Servants (agricultural)	0.14	0.93	0.13
Servants (proto industrial)	0.005	1.635	0.01
Others (23.5%)	0.235	0	0.00
	1		**4.87**

Table 5.[21] Canara is the coastal region of the present state of Karnataka; the latter also includes the erstwhile state of Mysore. If we assume a similar occupational distribution of population for Mysore, the important place of "cultivators" in the occupational distribution of population can be seen in Table 5. With almost 40% of the population consisting of cultivators, any study must include their standard of living and not just that of agricultural labourers.

Before we compute living standards of cultivators, we must admit that using the occupational distribution of Canara for Mysore was a second best choice given the lack of similarly disaggregated data. There is no doubt that the climatic and ecological conditions of the two regions are distinct, one being a coastal with heavy rainfall and the other predominantly dry land. However, as an order of magnitude computation, and given the safety margins taken into consideration below in computation of real wages, it is our contention that the occupational distribution of Canara

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[21] Buchanan 1999: 3.5 lists 122 castes and their occupation for ten districts of Canara. It is based on a census survey of almost 400,000 people.

adequately suffices for the task on hand. Occupational data of Baramahal, which as pointed out earlier, is a dry interior southern Indian region adjoining Mysore can be found (Parthasarthi 2001) in the year 1797. However, the grouping does not provide percentage of cultivators and agricultural labourers and servants; these have been grouped together as "inhabitants" and presumed to be "agriculturalists" by Parthasarathi (ibid.: 16). We have, therefore, retained our choice of using occupational distribution of Canara over that of Baramahal.

Buchanan's *Journey* provides us with some data, though relatively less than for wages, for computation of *cultivators'* welfare ratio. We present our method for computation of welfare ratios (R_g and R_c) for different cultivator (landholding size) classes in Table 6. Any final judgment of living standards of cultivators, however, depends on the landholding distribution amongst cultivators. Once again Buchanan's records at several places throws some light on different cultivating classes. A general summary is provided in Table 7, which, though revealing, does not give us a clear picture of the percentage of farmers in each class. We, therefore, go by Buchanan's record at Sira:

> The richest farmer in the place, who is the *Gauda*, or chief of a village… has ten ploughs; no other person has above six. About a fourth of the cultivators have one plough, a half two, and the remaining fourth from three to six (Buchanan 1999: 1.415)

Juxtaposing this information, we can say that most of the cultivators (about 50%) had ragi basket welfare ratios between 7.68 and 18.85. Even small cultivators, who may have constituted about 25% of cultivators, were not at barebones subsistence levels with ragi basket welfare ratio of close to three. The remaining 25% of cultivators, or 8% of the entire population, were rich farmers with high standards of living.

In addition to cultivators of grains and sugarcane, there were also cultivators who grew commercial crops like betel-nut (*areca*) or coconuts. As seen from Table 6, these farmers were in general extremely wealthy with a ragi basket welfare ratio of close to 28 and a rice basket welfare ratio of almost 17, thereby placing them above the category of large cultivators. Unfortunately, we do not have any indication of the percentage of cultivators who belonged to this category or what part of the total produce belonged to the category of such commercial crops.

Table 6: Computation of Rg and Rc for farmers and smelters

Place (Buchanan vol.page, crop)	Ploughs or area	Income (post tax)	Rg	Rc
Srirangapatnam (1.124) – Grain	1 plough = poor stock	1628	2.90	1.77
	2 – 3 = general	4311	7.68	4.68
	4 – 5 = great farmer	7325	13.06	7.95
	6 – 7 = prodigu-ous wealth	10579	18.86	11.49
Baswapattana (3.311) – Jagory	Farmer growing sugarcane and making jagory on 1 wocula land	1655	2.95	1.80
Chikkanayakana-halli (2.55) – Areca	Garden of 1000 trees = 8 cubits =3.6 meters apart = 3.5 acres	15592	27.80	16.93
	Garden of 1000 trees = 16 cubits =7.2 meters apart = 8.5 acres	14592	26.01	15.84
Magadi (1.176) – Iron Smelting	Net profit to pro-prietor of iron smelting unit @ 2 Fanams/smelting	1888	3.37	2.05
	Net profit to pro-prietor of iron smelting unit @ 3 Fanams/smelting	8032	14.32	8.72

Table 7: Farmer classes, their assets and labour

Page. Vol	Place	Number of Ploughs	Farmers class	Acreage	Servants (M, F)	Labourers (M, F))	Oxen
1.123-4	Srirangapat-nam	1	Poor				
		2,3	General				
		4,5	Great	12-13 wet; 25-36 dry	10	some	14
		6,7	Prodiguous				
1.389-90	Madhugiri	1	Poor	4.5 dry; 3.25 wet	1		2
		3,4	Wealthy				
		10	First rate farmers	82 dry + wet	10 plough-men, 2 other men, 10 women	some	
3.281	Nagar	10	Very great				
		3	Good stock	15 canda-cas = 165 bushels of rice	4	few if at all	6
3.321	Harihar	1 to 3	Poor (most farmers in this category) who work on advances	17	1/plough	few	2
		4 to 6	Do not borrow—live in ease				
		> 6	Rich men				

Interestingly shepherds too were rather well-off with a ragi basket welfare ratio of close to 15. This may not seem convincing but as Buchanan observed, for a rich *Goala*:

> his clothing, being a blanket, costs a mere trifle; and part of the money he expends in the marriages of the younger branches of the family, and in religious ceremonies; the remainder is buried, and a great deal of money is in this way lost… (ibid.: 2.13)

Table 5 also contains a caste which specialised in the profession of extracting the juice of palm trees, which was used either for the production of *jagory* (traditional unrefined sugar) and *tari*, or fermented juice of palm trees. This caste constituted almost 14% of the population in Canara. Even in erstwhile Mysore, Buchanan found that "in many places the *Phoenix farinifera* abounds; and intermixed with it, the *Elate sylvestris*, or wild date. From this the inhabitants extract *tari*, or *toddy*…" (ibid.: 1.54). Even though Tipu Sultan prohibited the consumption of liquor and even ordered that the palm tree to be cut down (ibid.: 1.56), we assume that this caste of juice extractors would also be found on the plains in about the same proportion as Canara. However, we have no record of the income of this caste in erstwhile Mysore. The only information available is from a place near to Madras (now Chennai) where Buchanan reports that annual[22] profit[23] of a juice extractor is about 13L-6s-4d, giving us ragi and coarse rice welfare ratios of 5.63 and 3.44 respectively.

From our analysis so far we are able to construct a picture of living standards in erstwhile Mysore across selected occupations. This occupational disaggregation is an improvement over many other studies of India where welfare ratios have been limited to a particular occupational class.

Constructing an Aggregate Welfare Ratio for Mysore c.1800

The disaggregated welfare ratios estimated so far do not allow us to support either the California School or opponents to it. An aggregate welfare ratio for the population is necessary if we are to draw a general picture of living standards for Mysore state in 1800. We will now attempt to estimate an aggregate welfare ratio from the disaggregated class-wise welfare ratios presented above.

We return to Table 5 above in which we have computed aggregate ragi basket welfare ratio, R_g^* by assigning weights based on the occupational distribution of the population. 23.5% of the population has been assigned

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[22] We assume 320 working days like other proto industries. Moreover, as Buchanan does mention that "the tree produces at all seasons" (ibid.: 1.10) we consider this a reasonable assumption.

[23] Buchanan goes on to comment that this is probably an underestimate of actual profits (ibid.: 1.10). However, we will take it to be satisfactory since it is the only information we have of the earnings of this caste.

to a non-earning category. This should dampen any possible overestimation of the aggregate welfare ratio. The ragi basket welfare ratio for each category has been estimated from Table 4, column 4 by averaging out the entire range of observation for each occupational category. For the class proto-industrial proprietors, merchants, etc. we have used the average (of the two possible data points reported by Buchanan) ragi basket welfare ratio of iron-smelters at Magadi from Table 5. Further, for agricultural servants and labourers we have taken a simple arithmetic average of men and women's average ragi basket welfare ratio. Based on these average welfare ratios, we have then computed the weighted average across all occupations; including non-earners (see Table 5). This gives us an aggregate (weighted average) ragi basket welfare ratio (R_g) of 4.87. The corresponding aggregate rice basket welfare ratio (R_c) is around 3.

Does this figure make sense? Could an average Indian, or rather a Mysorean, have had a ragi basket welfare ratio of close to five in 1800 A.D.? If true this can have significant repercussions for the Great Divergence debate and India's position in it. Surprisingly, a closer scrutiny of some observations recorded by Buchanan suggests that this figure may well have been possible.

Some Observations on Grain Wages Recorded in Buchanan's *Journey*

There are small pieces of information in Buchanan's *Journey* that could easily go unnoticed. A careful reading threw up a very surprising record from a small town called Sasvehalli (ibid.: 3.306) which put Allen's consumption basket and also our own assumptions of daily calorie intake, in doubt:

> A hard labouring man is supposed to eat daily the following quantities of different kinds of grain; the *Mana* of this place containing 84.375 cubical inches.
>
> 1.1/2 Mana of Ragy…
> 1 Mana of Jola…
> 1 Mana of cleaned Shanay…
> 1.3/4 Mana of cleaned[24] rice…
>
> The allowance for Jola is reckoned the most nutritious.

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[24] Buchanan has specified "cleaned" rice. This clears any doubt on whether the rice would have to be de-husked before cooking.

With a liter of ragi being equal to 0.815 grams, one and a half Mana works out to almost two kilograms of this grain! This is four times the quantity taken in our consumption basket so that a hard labouring man would be consuming daily almost 6400 calorie!

Is it possible that Buchanan had made a mistake or perhaps this was only a reference to what workers were *supposed* to have, not what they actually consumed? This is unlikely given that there are several such observations recorded at different places and for different grain. At Harihar he recorded:

> Mean labourers get daily half a fanam, or 3.1/2d, and women receive one half of this hire, which is seldom paid in actual money, but is given as Jola at the market price.[25] The man's wages will purchase daily about a quarter of a bushel (ibid.: 3.321).

A working couple then would earn about 11 kg of jola daily. Even with just 180 days of gainful employment for both men and women, a family would be able procure about 1980 kg of grain or three jola baskets of 1.80 kg each. If the man would consume his share of 1.80 kg, he would obtain about 6000 calories a day![26] This works out to a simple jola grain wage of almost four times barebones subsistence.

He makes yet another observation at the same place, noting that "the usual daily allowance of grain for one person's eating is ½ *Chitty*, or about 27 bushels, a year… the labourers feed upon Jola, or Ragy" (ibid.: 3.327). Given that a bushel of jola or ragi is about 29 kg, the annual consumption works out to 780 kg per year, which is more than two kilograms a day; very close to Buchanan's report from Sasvehalli.

At Nagar too, Buchanan reported that men and women servants get an annual combined allowance of 85 bushels of rough rice in kind apart from several petty items and some cash (ibid.: 3.280). This quantity of rough rice works out to 1.12 kg per day of clean de-husked rice for each adult and a remaining balance of 1.12 kg for three children. Even this quantity,

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[25] Buchanan has also reported the post-harvest average price of grain given to him by merchants (ibid.: 3.316). The price of jola is 16.378d/bushel. This corresponds quite accurately with the nominal wage rate reported by him.

[26] Interestingly this is closer to the daily minimum intake stipulated by the Indian Council for Medical Research (ICMR), 1981, of 3900 calories per day for a person doing hard labour. This has also be the core of some debate between the ICMR and minimum wage legislators; the latter were content with a 2000 calorie intake for a hard labouring man. See, for example, Abhay Bang (nd).

which is lower than those reported above, gives a daily calorie intake of almost 4000 calories. Interestingly, this quantity and corresponding calorie intake adjusts almost perfectly to the price differential between ragi and coarse rice.

The picture that emerges from Buchanan's observations is clearly not one of people surviving at some minimum level of calories. In fact, the calorie intake of close to four times makes it quite possible that an aggregate ragi basket welfare ratio of five is not impossible.

Welfare, however, does not only depend on what one consumes but also on how hard he or she has to toil (Bortz and Aguila 2006). Were work conditions in India so hard or arduous that may have actually necessitated consumption of such large quantities of grain? Buchanan's observations shed light on an agricultural labourer's daily routine and once again, surprisingly, it may not have been as harsh as one may imagine:

I quote at length Buchanan's, (rather idyllic) report from Shimoga, which states that

> these wages are very high, when it is considered that no servant works here more than six hours. The labourers gave me the following account of the manner in which they pass their time. About eight o'clock of our day they rise from bed, and smoke tobacco; they perform their evacuations, and ablutions; and having been purified, they worship the gods. Then they eat, an operation in which two hours are expended. Then they rest themselves half an hour, when they proceed to the field, and work six hours. On their return, they again pray, and take a little of any cold victuals that they have ready. Then they look after the cattle, and give them water and fodder. The labour of the day is now over; and the workman, having again washed and prayed, takes his supper, and about seven o'clock goes to bed, where he remains thirteen hours. This is their employment during the six months of toil. In the remaining half of the year, little cultivation being carried on, they repair their houses, lay in a stock of firewood, carry out dung, and do other little jobs about the farm. Masters, of course, work still less (Buchanan 1999: 3.298)

This may have been the most positive representation, but in general "the people here work from eight in the morning until sun set, and in the middle of the day are allowed twenty-four minutes to rest and eat" (ibid.: 3.321).

At Harihar, Buchanan made a similar observation on the nature of work:

> the hours of labour in this country are from eight in the morning until noon, and from two o'clock until sunset; in all about eight hours. The labourers get up about sun rise;

but an hour is spent in their evacuations, in which the Hindus are excessively tardy; and another hour is spent in ablutions, prayer, marking their faces with consecrated ashes or clay, and in eating their breakfast. They eat three times a day, their principal meal being at noon (ibid.: 3.350)

Life of labourers then was not one of deficiency. Even cultivators were not stressed or particularly wanting,

The *Amildar* says, that without compulsion they (cultivators) would not cultivate more than 2/3 or ¾ of what they are able. A subsistence is all they look for, and with little labour that can be procured. Superfluities, or riches, they have some reason to consider as mere temptations to the plunderer... (ibid.: 3.320)

In fact, we can gather from his observations that cultivators were not in any way struggling for survival:

The *Tarugara*, or *Aduca*, collects the farmers, and prevents them from following any other occupation than that of cultivating the land.... The lower classes of people in India are like children... the duty of the Aduca is to bustle among the farmers, and to call them out to work. He may therefore be called the beadle of the village (ibid.: 1.270).

Our aggregate welfare ratio and analysis of some qualitative remarks in the *Journey* clearly portrays a radically different picture of erstwhile Mysore than what the literature has so far presented. If this is indicative of conditions in south India, and there is little reason not to do so,[27] then Buchanan's *Journey* convincingly puts us on the side of the revisionist or the California School.

The representativeness of the data from Buchanan's *Journey* for living standards in Southern India in the late eighteenth century

Before anyone jumps to conclusions about living standards in southern India in the early nineteenth century, we hasten to add a cautionary note on the state of the economy at the time of Buchanan's *Journey*. We had mentioned earlier that our paper is based entirely on observations recorded at one point of time. The possibility that the chosen moment may not have

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[27] This is especially true because Mysore more than rest of southern India had witnessed several years of wars and famine in the late 1700s.

been "typical" of the times is a possibility especially since the year 1800 was a politically significant one in Mysore history. The state had witnessed many wars throughout the second half of the eighteenth century, culminating with the Fourth War of Mysore in 1799. Both the rural agrarian economy as well as proto industrial sector had been affected by these wars. However, their impact on welfare ratios is not easy to ascertain.

As Kumar in her essay on South India put it,

> some of the southern districts and parts of Mysore escaped the ravages of war altogether, others recovered from them fairly quickly, while in yet others, the destruction of irrigation works or of trade had more lasting effects of depopulation and impoverishment. The truth is that we cannot, in our present state of knowledge, make any quantitative statements about the south Indian economy from 1757 to 1800 (Kumar 1983: 353).

Buchanan had himself reported the widespread damages the wars had inflicted especially around the capital, Srirangapatnam. However, at places a few hundred kilometers too he spoke of untilled land, deserted villages and irrigation works which were severely damaged. However, for us, more than the general conditions prevailing in the region, it is the impact of the war on nominal wages and prices that is most important.

As mentioned earlier, the net impact of war on real wages is difficult to ascertain. Scarcity due to war could have increased the prices of grain but at the same time also increased the nominal wages because a decrease in available supply of labour and a consequent increase in nominal wage rates. But whether or not there really was an impact on these elements is not clear.

Real wages were, however, at about the same levels in other parts of south India as in Mysore state. At Mangalore, Buchanan reported a male servant would get 21.75 bushels of clean rice annually and a women would get about 16.3 bushels annually. This works out to a combined wage of 38 bushels annually. In addition to these wages in kind, there were other payments in kind (a piece of cloth) and some wages in cash (Buchanan 1999: 3.35). In sum, these wages were on par with those that Buchanan reported at Nagar, a town in the state of Mysore, of 85 bushels combined for a man and woman.[28] Given that the spatial variation in real wages was not sharp we believe that wages and prices reported by Buchanan in 1800 across

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[28] See above.

Mysore were not historical outliers and can be taken as satisfactory indicators of living standards at that period of time. Kumar's remarks lend support to our claim, that "the villagers were often left in peace, or they fled to the hills, to return when the short-lived battle was over. Even trade was often uninterrupted by the war" (Kumar: 353). However, a useful avenue for future research, that could also render our findings more robust, would be to compare real wage data compiled from Buchanan's *Journey* to archival records and reports for Madras Presidency in the late eighteenth century.

Conclusion

Our study has shown that at the turn of the nineteenth century with an aggregate ragi basket welfare ratio of almost five, the erstwhile state of Mysore could have had living standards levels comparable to even the advanced parts of Europe. There is little reason to think this is unreasonable when Buchanan personally witnessed and reported that the agricultural workers received "wages (that) are very high, and may enable hired servants to keep a family in the greatest abundance" (Buchanan 1999: 3.37). Though living standards were high in 1800-1, it does not allow us to infer that it was colonisation, and colonisation only, that thereafter led to stagnation. Would Mysore have stagnated even if the British had not intervened in its affairs politically and economically? Or did the West move onto a high growth path for reasons other than colonisation? We are faced with many such counterfactual questions; seeking answers to these are beyond the scope of this paper. But one thing our study collated from Buchanan's *Journey* reveals is that the revisionists' claims cannot be dismissed without sourcing quantitative and qualitative data and subjecting it to thorough analysis; India's position in the Great Divergence debate could well throw up some interesting surprises.

Bibliography

Alam, M. Shahid. 2006. Global Disparities Since 1800: Trends and Regional Patterns. *Journal of World-Systems Research* 17.2: 37-59.

Allen, Robert C. 2005. *Real Wages in Europe and Asia: A First Look at the Long-Term Patterns in Living Standards in the Past*. In *Living Standards in the Past: New Perspectives on Well-Being in Asia and Europe, eds* R.C. Allen, T. Bengtson, and M. Dribe. Oxford: Oxford University Press: 111-130.

———. 2007. How Prosperous Were the Romans? Evidence from the Diocletian's Price Edict (301 A.D.). *Department of Economics, Discussion Paper Series, University of Oxford* 363.

———. 2008. *The Great Divergence in World Incomes: Why Are Some Countries Rich and Others Poor?* http://www.lrz-muenchen.de/~ces/allen-lect1.pdf.

Allen, Robert C., Jean-Pascal Bassino, Debin Ma, Christine Moll-Murata and Jan Luiten van Zanden. 2007. Wages, Prices, and Living Standards in China, 1738-1925: In Comparison with Europe, Japan, and India. *Department of Economics, Discussion Paper Series, University of Oxford* 316.

Bairoch, Paul. 1981. *The Main Trends in National Economic Disparities since the Industrial Revolution.* In *Disparities in Economic Development since the Industrial Revolution,* eds P. Bairoch and M. Levy-Leboyer. New York: St. Martin's Press.

Bang, Abhay. (nd). Minimum Wages for Agricultural Labourers: A Critique of the Page Committee Recommendations. http://nirman.mkcl.org/Downloads/Articles/Minimum Wages for Agricultural Labour.pdf

Battacharya, Durgaprasad and Rama Deb Roy (Malakar). 1977. Agricultural Wages in Bengal and Bihar, 1793-1972**.** *Social Scientist* 6.1: 65-73.

Bin Wong, R. 1998. *China Transformed: Historical Change and the Limits of European Experience.* Ithaca: Cornell University Press.

Booth, Anne. 2006. *What do Trends in Wages Tell Us about Living Standards? Some Evidence from Southeast Asia.* Paper prepared for Session 41 (International Differences in Economic Welfare: A Long-run Perspective). Helsinki: XIV International Economic History Congress.

Bortz, Jeffrey and Marcos Aguila. 2006. Earning a Living: A History of Real Wage Studies in Twentieth Century Mexico. *Latin American Economic Review* 41.2: 112-138.

Broadberry, Stephen and Bishnupriya Gupta. 2006. The Early Modern Great Divergence: Wages, Prices and Economic Development in Europe and Asia, 1500-1800. *Economic History Review* 59.1: 2-31.

Buchanan, Francis. 1999. *A Journey from Madras through the Countries of Mysore, Canara, and Malabar,* 3 vols. New Delhi: Asian Educational Services.

Desai, A.V. 1972. Population and Standards of Living in Akbar's Time. *Indian Economic and Social History Review* 9:43-62.

———. 1978. Population and Standards of Living in Akbar's Time—A Second Look. *Indian Economic and Social History Review* 14:53-80.

Frank, Andre Gunder. 1998. *Reorient: Global Economy in the Asian Age.* Berkeley: University of California Press.

Jarrett, H.S. 1949. *Ain-i-Akbari of Abu'l Fazl-i-Allami.* Calcutta: Royal Asiatic Society of Bengal.

Kumar, Dharma. 1983. South India. In *The Cambridge Economic History of India: C. 1757-C. 1970,* eds Dharma Kumar, Tapan Raychaudhuri, Meghnad Desai, Irfan Habib. Cambridge: Cambridge University Press: 352-375.

Kuznets, Simon. 1965. *Underdeveloped Countries and the Pre-Industrial Phase in the Advanced Countries: An Attempt at Comparison.* In *The Economics of Underdevelopment,* eds A.N. Agarwal and S.P. Singh. New York: Norton.

Landes, David S. 1998. *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor.* New York: W. W. Norton & Company.

Lee, James Z. and Wang Feng. 1999. *One Quarter of Humanity: Malthusian Mythology and Chinese Realities, 1700-2000*. Cambridge, Mass: Harvard University Press.

Lewis, Barry. 2001. *The Mysore Kingdom at AD 1800: Archaeological Applications of the Mysore Survey of Colin Mackenzie*. In *South Asian Archaeology Volume II,* eds C. Jarrige and V. Lefevre. Paris: Editions Recherche sur les Civilisations: 557-565.

Moosvi, S. 1973. Production, Consumption, and Population in Akbar's Time. *Indian Economic and Social History Review* 10:181-195.

Nanavaty, Reema. 2003. Women Agriculture Workers, *Seminar* 531. Parthasarathi, Prasannan. 1998. Rethinking Wages and Competitiveness in the Eighteenth Century: Britain and South India. *Past & Present* 158.1:79-109.

Parthasarathi, Prasannan. 2001. The Transition to a Colonial Economy Weavers, Merchants and Kings in South India, 1720-1800. Cambridge: Cambridge University Press.

Pomeranz, Kenneth. 2001. *The Great Divergence: China, Europe, and the Making of the Modern World Economy*. Princeton: Princeton University Press.

Sivramkrishna, Sashi. 2009. Production Cycles and Decline in Traditional Iron Smelting in the Maidan, Southern India, c. 1750-1950: An Environmental History Perspective. *Environment and History* 15: 163-197.

Studer, Roman. 2008. India and the Great Divergence: Assessing the Efficiency of Grain Markets in Eighteenth- and Nineteenth-Century India. *Journal of Economic History* 68: 393-437.

Vicziany, Marika. 1986. Imperialism, Botany and Statistics in Early Nineteenth-Century India: The Surveys of Francis Buchanan (1762-1829). *Modern Asian Studies* 20.4: 625-660.

Zimmerman, L.J. 1962. *The Distribution of World Income, 1860-1960*. In *Essays in Unbalanced Growth*, ed. E. de Vries. The Hague, Netherlands: Mouton.