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Globalisation and Rural Household Welfare in Tanzania

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ABSTRACT

This study examines the impact of globalisation on rural households in Tanzania. In particular, the study compares the welfare of the more globalised regions of Tanzania with the not so globalised regions. The globalised regions are defined as those regions whose contribution to export production of four crops is more than 20 percent. The welfare of rural households in more globalised regions is more likely to be affected by changes occurring in the international market for the crops that they grow. The study utilises some welfare indicators from the 2000/01 household budget survey to examine the welfare impact of globalisation, and as such, provides a baseline indication of the welfare between globalised and not so globalised regions. In general, the study finds that the households from globalised regions have better welfare indicators. For example, the study finds that the average difference in the following indicators as determined by the t-test statistics is significant at the 5 and 10 percent level of significance; mean expenditure per adult equivalent (price adjusted), percentage of households living in houses with modern floors, and percentage of households living in houses with modern roofs. Thus, it seems that more globalised regions fare better that the not so globalised regions.

Keywords: Globalisation, welfare, international trade, Tanzania
JEL Classification: I3, F10, O55

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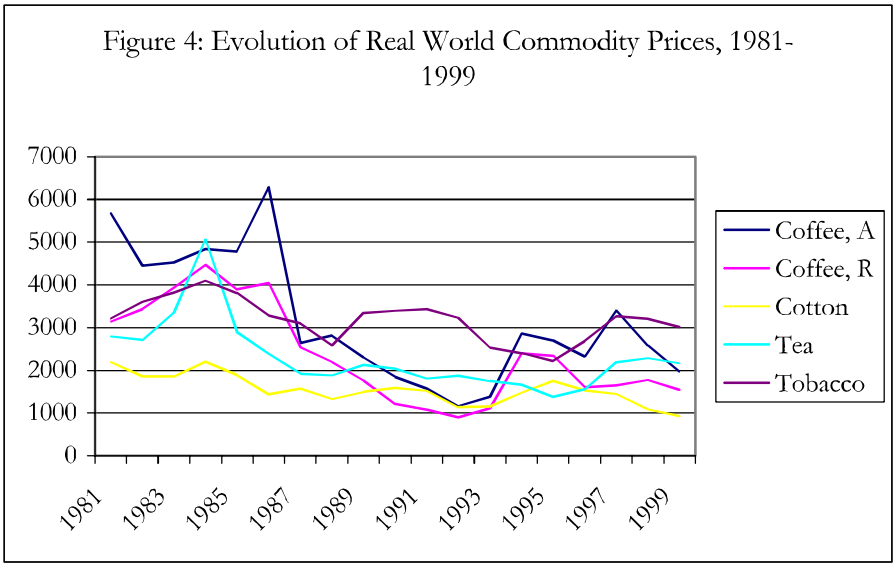
1.0 INTRODUCTION

In this paper, globalisation is defined as simply the increase in the integration of economies in the world through trade. lobalisation has brought about changes in rural communities of developing countries, which are now a subject of much research (see Reimer, 2002, Killick, 2001; Winters, 1999). More recently, the debate has focussed on whether or not more open policies to trade are beneficial to poor countries (see for example, Rodrik, 2001).

For a country like Tanzania, rural households have been integrated with the global economy since the colonial era, and in their continued participation in the global market through sales of agricultural crops for the much-needed foreign exchange earnings. However, the changes that have been occurring in the global market for agricultural commodities have had effects on rural communities whose livelihoods are dependent on agriculture. These effects need to be empirically investigated and recorded. Besides prices changes on the international market, the Tanzanian government has undertaken some market and trade reforms as part of a wider structural adjustment programme, under the tutelage of the IMF and the World Bank, which have also in one way or another, affected the rural communities. The liberalisation measures have aided the rapid integration of the Tanzanian economy with the global economy.

An interesting question is whether the rural households in more globalised regions enjoy a higher welfare level. The answer is by no means obvious. There were reports in the Tanzanian media of farmers uprooting coffee trees, and instead planting tomatoes and green beans, both non-tradable crops (TOMRIC News Agency, 2001).[2] To most people who perceive cash crop farmers as being wealthier than non-cash crop farmers, such reports seemed crazy. How can people who are better off destroy a key income earner? Such reports of farmers uprooting coffee trees means that it is not obvious then that cash crop farmers are better off, if they can destroy a potentially high-income earner, in preference for non-tradable crops. In order to examine whether indeed cash crop farmers are better off, data from the 2000/01 household budget survey can provide tentative answers to such a query. Calculating the relative welfare of households in rural areas can help to shed some light on whether indeed cash crop households are better off than non-cash crop farmers.

Figure 4: Evolution of Real World Commodity Prices, 1981-1999



Source: The World Bank, (2000), "Agriculture in Tanzania since 1986: Follower or Leader of Growth?", June.

This study thus measures the impact of globalisation on the welfare of rural households in Tanzania, and hence it contributes to the wider debate of globalisation and welfare in developing countries, by way of providing empirical results and theoretical discussions. In particular, the study compares the welfare of rural households residing in 'globalised' regions versus those living in 'not so globalised' regions. The study establishes that areas that trade more outside of the country have higher consumption; but whether wealth causes trade or trade causes wealth is another question.

[2] It is important to note though that in areas such as Arusha and Kilimanjaro where these goods are exported to Kenya, they can hardly be considered to be non-tradables.

The households in the two groups are affected differently by changes occurring in the economic environment pertaining to their productive activities as the Tanzanian economy becomes more integrated globally. The changes relate to movements in the prices of agricultural products that are sold on the international market. To the extent that these changes affect the returns to factors of production, there is going to be effects at the household level in terms of welfare. A number of studies have been done to examine the changes in the factor rewards as economies become more integrated, and the implication on income distribution (see for example, McCulloch, Baulch, and Cherel-Robson, 2000; Bigsten and Durevall, 2002).

The paper is structured as follows; section 2 gives a brief presentation of the importance of the rural sector to the Tanzanian economy. This is followed by a presentation of the theoretical basis of the study and a review of literature in section 3. Section 4 discusses the data used and the empirical strategy, and section 5 presents the results. The last section (section 6) gives a concluding discussion.

2.0 THE IMPORTANCE OF THE RURAL SECTOR TO TANZANIA'S ECONOMY

The rural sector is quite important to the Tanzanian economy. It provides a substantial percentage of export earnings. On average, between 1990 and 1999, Tanzania's value added in agriculture as a percentage of GDP was approximately 47 percent (see Table 1). In terms of export earnings, between 1990 and 1999, agriculture exports contributed close to an average of 60 percent of Tanzania's export earnings. The rural sector also absorbs a substantial amount of labour resources. Between 1990 and 1999, the agriculture sector absorbed an average of 74 percent of the labour force.

Given the importance of the rural sector to the Tanzanian economy, in terms of export earnings and employment of a large percentage of the labour force, changes in the prices of cash crops that are grown will have a large effect on the whole economy, as would any change in policies affecting the rural sector. While the policy reforms have had their share of impacting on the rural people,[3] the prices of agricultural products have also had their share. In Tanzania, a number of rural households are engaged in the production of cash crops that are sold on the international market. Such rural households are therefore linked to the global economy through the export crops they grow and sell, and thus fluctuations and the declining of prices of the crops impact directly on their livelihood.

Table 1: Main Export Products and Importance of the Agriculture Sector to Tanzania, 1990-2000

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average, 1990-99
% Contribution to Total Exports											
Cotton	22.2	17.9	22.9	17.5	20.1	17.7	17.5	17.3	8.1	5.3	16.7
Coffee	24.1	21.8	14.0	21.8	22.2	20.8	18.8	15.8	18.4	14.0	19.2
Sisal	4.7	0.6	0.3	0.8	1.0	0.9	0.7	1.2	1.2	1.3	1.3
Tea	6.3	6.3	5.8	8.4	7.6	3.4	3.3	4.2	5.1	4.5	5.5
Tobacco	3.1	4.9	6.6	3.9	4.0	3.9	6.2	7.2	9.4	7.9	5.7
Cashew nuts	1.5	4.6	5.2	5.0	10.0	9.2	10.4	12.1	18.3	19.1	9.5
Petroleum Products	1.5	1.8	2.0	3.1	1.1	1.6	1.7	0.9	0.0	0.1	1.4
Minerals	5.4	11.2	10.4	15.5	5.8	6.5	6.9	6.8	4.5	12.8	8.6
Manufactured Products	4.8	16.3	14.9	11.9	14.8	16.1	14.2	14.7	6.1	5.9	12.0
Others	26.4	14.5	17.9	12.1	13.5	19.7	20.3	19.6	29.0	29.2	20.2
Agriculture value added as% of GDP	45.96	48.1	48	48.11	45	47.14	48.03	46.8	44.77	44.8	46.7
Rural population as % of total pop.	79.2	78	76.8	75.54	74.3	73.1	71.9	70.7	69.5	68.3	73.7

Source: Bank of Tanzania, Official Website, World Bank, (2000), World Development Indicators CD-ROM.

Figure 1 depicts the evolution in the real prices of a few selected export crops grown in Tanzania (arabica coffee, robusta coffee, cotton, tea and tobacco). The trend of all the real prices is downward throughout the 1980s to the early part of the 1990s, although in 1986, the coffee market had a boom, and a sharp spike in the trend reflects this. During the later part of the 1990s, the real prices are slightly higher compared to the early 1990s, although the trend is still downward. The decline in the prices has implications on the income and welfare of people dependent on growing and selling cash crops. The effects of price declines in the cash crops may affect the level of expenditure of the household, the allocation of household income to several social and economic activities such as education, health and housing.

[3] The paper does not examine the impact of the policy reforms. Ferreira (1996) provides an in-depth analysis of the impact of structural adjustment reforms on the rural poor in Tanzania using household budget survey data for 1983 and 1991/92.

3.0 THE THEORY AND LITERATURE REVIEW

In order to evaluate the welfare of rural households, one needs to understand the price effects of their economic activities. The welfare impact on rural households can stem from the prices they face for the products they grow for sale either on the international market or locally. While prices on the international market and the local market can change due to supply and demand forces, local prices can also change due to market and trade reforms undertaken by the government. In order to examine the welfare impact, economic theory can provide a starting point; first of all by looking at the world when markets are perfectly competitive, as a basis, and then see what the real world offers.

The standard Hecksher-Ohlin model can help to see what could happen to rural factors of production, and hence welfare, when prices change. Assume a country that is small and has an open economy, and it produces two goods, a tradable that is grown locally but sold on the international market, and a non-tradable that is grown locally but not sold on the international market. Since it is a small economy, it is a price taker in relation to the tradable good; the price of the tradable good is given on the international market, while the price of the non-tradable good depends on demand and supply forces in the local economy. Assume further that the markets for factors and goods are perfectly competitive, and the factors of production are homogeneous.

Given the simplified economy above, consider what would happen if the price of the tradable good (P_T) increased. The returns to the factors used in producing the tradable good would increase, while factors of production employed in the production of non-tradables would move to the tradable sector. Due to the movement away of factors of production from the non-tradable sector, the supply of non-tradables would decrease, which would in turn push up the price of non-tradable goods (P_{NT}). The increase in the price of non-tradable goods would increase the returns to the factors in the sector. This process would continue until the returns to the factors of production are equalised.

The exact opposite would happen if the price of tradables decreased; the returns to factors used in production of tradables decrease, and factors employed in tradables would move to the non-tradable sector. Thus, the supply of non-tradables would increase, which would in turn depress the price of non-tradables and the returns to factors of production in the non-tradable sector. Once again, the process would continue until equalisation in returns occurs.

The above process occurs precisely because the simple model assumes perfectly competitive markets, and free movement of factors of production. However, in the real world, markets are not perfectly competitive, and factors of production are not perfectly mobile due to rigidities in factor markets such as a lack of information, transport costs, and distance. These rigidities prevent factors of production from shifting from one sector to another in a smooth and fairly rapid manner. Also, in the real world, factors are not homogeneous in that differences in the quality of factors of production prevent the smooth movement of factors between tradable goods production and non-tradable goods production. In short, factor rewards are prevented from complete equalisation due to transport costs, imperfect markets, tariffs, and knowledge gaps (Dunn and Ingram, 1996). What thus happens in the real world is that price changes and their effect on factor rewards tend to be persistent. That is to say, if a price change occurs, the impact on returns to factors of production will last for a long time, and therefore the relative welfare of households who supply the factors of production gets affected.

Bigsten and Durevall (2002, pp.6-7) have identified four different ways in which factor rewards can be influenced. These are; through changes in the factor endowments of the economy, through policy-induced changes in the prices of goods, through price changes in the international market, and lastly, through the integration of the domestic factor market with the international factor markets. Examples of each of the four ways are given below, and the implications on the welfare of households are drawn.

3.1 Changes in the factor endowments of the economy

Suppose Tanzania discovered some natural gas off its eastern coast. The discovery would mean that more employment would be created for people; hence their rewards would be higher. The investors in the gas industries would also reap some profits from it. Thus, such changes in the endowments of a country can affect the returns to factors of production in a positive way. However, as the theory of the Dutch Disease[4] has illustrated, negative effects can also result from such changes or discoveries in factor endowments.

[4] It refers to the de-industrialisation of a nation's economy that occurs when the discovery of a natural resource raises the value of that nation's currency, making manufactured goods less competitive with other nations, increasing imports and decreasing exports. The term originated in Holland after the discovery of North Sea gas (http://www.investorwords.com/).

3.2 Policy-induced price changes in the price of goods

When trade reforms are undertaken through say a reduction in import duties, they have the effect of lowering the prices of imported goods. This in turn affects the consumption and income patterns of both the rich and the poor. In terms of consumption, the impact of the reduction in import duties depends on the proportion of income that is spent on imported goods. Thus, the benefit to the poor is higher the higher their expenditure is on imported products. In income terms, the effect depends on the sector in which the poor are most concentrated. This is because when trade is liberalised it affects the relative prices of goods in different sectors, resulting in resources being reallocated. Thus, if the poor are in sectors that are affected in a negative way, they may suffer a decline in their income. However, if the poor are in sectors that benefit, their income and employment opportunities would increase.

3.3 Price changes in the international market

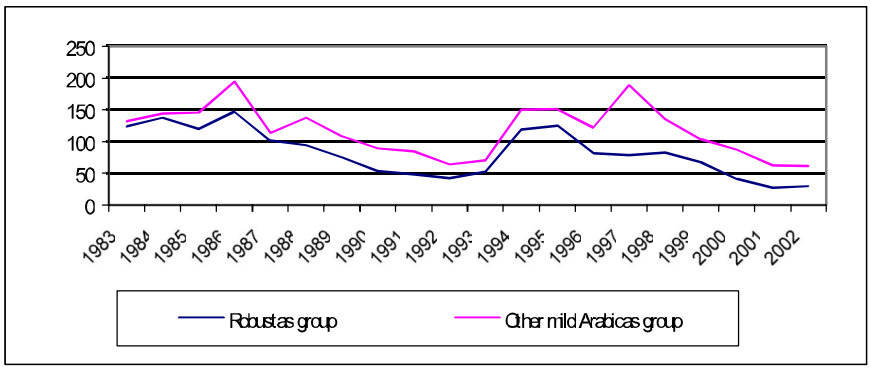
When the price of coffee falls on the international market, the farmers engaged in coffee production not only experience a fall in their earnings from exports, but also, they experience a fall in the returns to land and capital used in coffee production. If the fall in the price of coffee is such that it becomes lower than the price of other crops that are not sold on the international market, then the opportunity cost of maintaining coffee trees on land that can be used for growing other more lucrative crops can be quite high. Rational farmers could then switch to more profitable crops. If the fall in the price of coffee is permanent, it is obvious that the returns to households' engaged in coffee farming, and hence their welfare, would be lower than that of households growing more lucrative crops.

In Figure 2, we can see that the international price of coffee, as indicated by a composite price indicator computed by the International Coffee Organisation, has been falling since the mid 1980s through to the early 1990s. From the early 1990s, the prices went up slightly, but fell again. From 1995 (for robusta coffee) and 1997 (for arabica), the trend has been a downward one. The declining prices on the international market have affected the amount that farmers are paid locally. This is shown in Figure 3.

Among the factors responsible for the fall in the price of coffee on the international market is the increase in the production of coffee in recent years. Actually, there has been an oversupply of coffee in world markets in relation to demand. The massive production has been due to planting of new coffee trees, technological innovation, and arrival of newcomers in the market (Charveriat, 2001).[5] However, while the price of coffee on the international market has been falling, it is puzzling that the retail price of coffee in some developed countries has been increasing. For example, in the United States, Morisset (1998) found that the price of coffee on world markets declined by 18 percent but increased by 240 percent for consumers between 1975 and 1993 (see also Figure 4). Some of the explanations for this phenomenon are that, first, there has been an explosion in quality or 'gourmet' coffee, whereby the traditional coffee consumers are consuming less coffee of a higher quality than they were in the past. The gourmet coffee market offers less coffee content, but fancier freshness and flavourings (Fitter and Kaplinsky, 2001). Second, new technologies for steam cleaning Robusta coffee (which is more bitter and has a lower quality than Arabica coffee) to improve its quality and make it less bitter, has been particularly damaging to Arabica coffee, as it has allowed the substitution of cheap Robusta coffee for Arabica (Fitter and Kaplinsky, 2001).

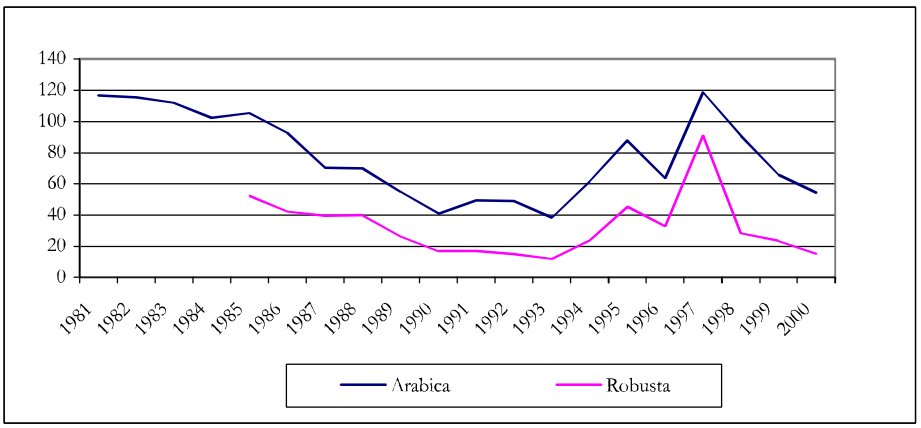
[5] For instance, the arrival of Vietnam as a significant exporter (now the world's second largest exporter), when just ten years ago, was insignificant (Charveriat, 2001).

Figure 2: ICO Indicator Prices



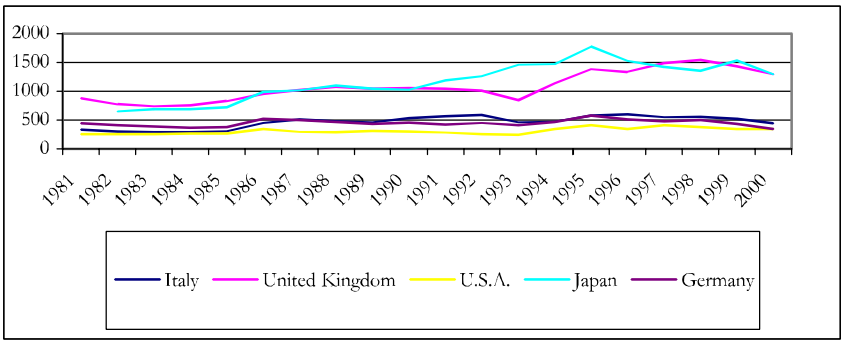
Source: http://www.ico.org

Figure 3: Prices Paid to Tanzanian Coffee Growers in US cents per lb



Source: http://www.ico.org

Figure 4: Retail Prices in Importing Member Countries in US cents per lb, (Average Price Per Year)



Source: http://www.ico.org

3.4 Integration of the domestic factor market with the international factor markets

When domestic factor markets become integrated with the international factor markets, factor prices can be affected. In Africa, the integration of factor markets has not occurred at a large scale, except perhaps in capital markets (Bigsten and Durevall, 2002). Labour has also been mobile, albeit through largely individual efforts as opposed to organised labour institutions and regulations.

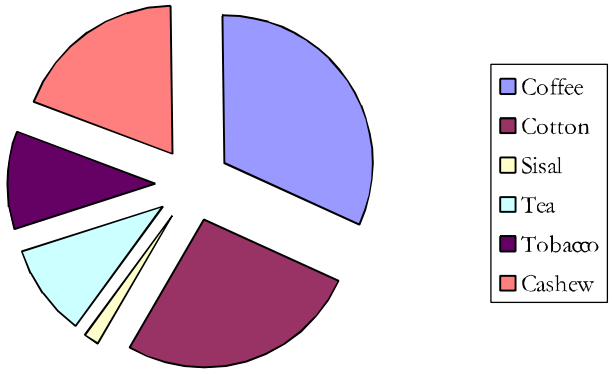
In the capital market, most African countries have liberalised their capital accounts and domestic stock markets, and have also instituted large-scale privatisation programmes (Prasad et al, 2003). These reforms occurred as part of structural adjustment programmes, and they have enabled financial resources to flow from the developed world to the developing countries (see also Bigsten, 2002). However, a research by Prasad et al (2003) has shown that although African countries have few formal restrictions on capital transactions, they have not experienced significant capital flows compared to Latin American countries which appear closed but have large average capital flows.

In the labour market, although it is estimated that 2.3 percent of the world population currently live outside their country of birth, there are some factors hindering the rapid movement of people, especially of Africans to more industrialised countries. These are, immigration policies, cultural and language barriers (Killick, 2001). Within Africa, large flows of people across borders exist, as in some instances border controls do not exist. However, recent clashes in Cote d'Ivoire of local people and immigrants are a disincentive to people intending to migrate to other African countries in search of better jobs (see also Bigsten, 2002).

4.0 THE DATA AND EMPIRICAL STRATEGY

Ideally, in order to calculate the relative welfare of cash-crop households, consumption data should be used. A comparison of the welfare between two periods of time can also help to ascertain whether they have suffered a reduction in their welfare or not. Other researchers have used this approach to estimate the impact of trade liberalisation on poverty (see for example, Reimer, 2002; Thang, et al, 2001; Mc Culloch et al, 2000). However, for Tanzanian household budget survey data, this kind of analysis is not possible because the households' main source of income is not recorded according to crop type, but rather according to broad categories of activities such as peasant farming and cash sales of crops. This categorisation is not adequate as people engaged in cash crop sales may not necessarily be the farmers themselves, but merely businessmen buying crops from farmers and reselling them.

Figure 5: Average Percentage Contribution of Export Crops to Total Export Earnings, 1991-2001



To get around this categorisation problem, we instead focus the analysis on regions rather than on households. A comparison of regions that grow a large share of cash crops for the export market with those that do not is done, or those whose cash crop composition is greater versus those whose cash crop composition is minimal. In other words, a comparison is made between those regions that are more 'globalised' with those that are not, to ascertain whether there are any welfare differences between them. That is, are households in regions that are more export-oriented and hence are more globalised better off than the households in regions that are not globalised? Establishing this will serve as a first step in indicating how prices of export crops on the international market have influenced the welfare of households, and will indeed indicate one important effect of globalisation.

Five export crops were considered, namely, coffee, cotton, tea, sisal, and cashew nuts[6], due to availability of production data by region for the season 1991/92 to 2000/01 (see URT, 1998; http://www.agriculture.go.tz).

Then production data was averaged over the period. Those regions with an average contribution of 20 percent[7] or more to total production of the five export crops were considered more globalised, while the rest were classified as 'not so globalised'. Table 2 gives a categorisation of globalised and not so globalised regions. It is important to also note that only

[6] These crops contributed, on average 17.2, 14.2, 5.3, 0.9 and 10.5 percent, respectively, to total export earnings of Tanzania between 1991 and 2001. Tobacco, although important, is not included because besides lack of production data by region, it was found that its average contribution to export earnings between 1991 and 2001 is not significant (on average it contributed 5.9 percent to export earnings) (Calculated from data provided by the Board of External Trade, http://www.bet.co.tz/statistics.html, See Figure 5; http://www.agriculture.go.tz).

[7] The choice of the 20 percent cut off was arbitrary.

rural areas were considered in this study, as these are the areas that grow export crops. Furthermore, Table 3 gives the percentage contribution of the globalised regions for each of the export crops, and the period for which data was available.

Table 2: Classification of Regions

GLOBALISED	NOT SO GLOBALISED
Kilimanjaro	Dodoma
Mbeya	Morogoro
Ruvuma	Singida
Shinyanga	Tabora
Mwanza	Rukwa
Iringa	Kigoma
Tanga	Arusha
Mtwara	Mara
Kagera	Lindi
	Coast

Note: Categorisation of regions based on average percentage contribution to total production in five Crops.

Table 3: Contribution of Five Export Crops to Total Crop Production

CROP	PRODUCTION DATA	REGION	PERCENTAGE CONTRIBUTION
Tea	1991/92-2000/01	Iringa	59
		Tanga	25
Coffee	1991/92-1999/00	Kilimanjaro	21
		Mbeya	20
		Ruvuma	20
		Kagera	34
Cotton	1991/92-2000/01	Mwanza	34
		Shinyanga	46
Sisal	1999-2000	Tanga	78
Cashew nuts	1991/92-1997/98	Mtwara	51

Source: URT, (1998), Basic Data: Agriculture and Livestock Sector 1991/92-1997/98, Ministry of Agriculture and Co-operative; .http://www.agriculture.go.tz, Production Area and Yield of Cash Crop; Author's own calculation.

The welfare of households was then compared between the two categories. Various indicators from the 2000/01 household budget survey were used for this comparison. The next section presents and discusses the results.

5.0 WELFARE INDICATORS AND ANALYSIS

Tables 4 to 7 give indicators of the welfare of rural households in Tanzania, extracted from the household budget survey of 2000/01. The tables contain calculated averages of the welfare indicators, and t-test statistics for testing the significance of the difference in the means of each of the indictors.[8]

Starting with income and food, Table 4 shows that on average, the mean expenditure per adult equivalent and mean consumption expenditure per capita is higher in globalised regions than in not so globalised regions. The t-test indicates that the difference in the means of these two indicators is significant at 5 percent. In terms of the percentage of consumption expenditure on food, households in globalised regions allocate less to the food budget than the households in the not so globalised regions. In general, the percentage of expenditure on food is used to indicate how poor a household is relative to another. Households who spend a higher percentage of their income on food are regarded as poor. In other words, the poorest spend most of their income on food. For example, the Household Income and Expenditure Survey of 1995/96 in Sri Lanka defined as one of the criteria that a household that spent more than 50 percent of its income on food was regarded as poor (see also, National Bureau of Statistics, 2002, p.70). Thus, in relative terms, the globalised regions of Tanzania allocated 66 percent of their income on food, while those in not so globalised regions allocate 69 percent. Thus, those in not so globalised regions are relatively poorer than those in globalised regions, and the t-test indicates that the difference in the mean is significant at 5 percent.

Table 4: Income and Food, 2000/01

Globalised	1	2	3	Not so Globalised	1	2	3
Kilimanjaro	11060	10580	70	Dodoma	10176	7587	67
Mbeya	13167	11548	63	Morogoro	10344	8253	71
Ruvuma	9718	8592	61	Singida	7911	6372	70
Shinyanga	8886	7273	68	Tabora	10437	9590	69
Mwanza	10252	7716	63	Rukwa	9590	6204	58
Iringa	11527	10765	66	Kigoma	9243	6384	65
Tanga	9903	8802	71	Arusha	9417	8750	71
Mtwara	10105	11712	68	Mara	8927	7612	66
Kagera	11068	8456	64	Lindi	8399	8263	77
Average	10578.25	9358	65.5	Coast	9537	9922	71
				Average	9398.1	7894	68.5
t-test	2.33**	2.05**	1.55*				

Notes:

1 Mean Expenditure per Adult Equivalent (price adjusted)

2 Mean consumption expenditure per capita (nominal prices)

3 % Consumption expenditure on Food

** Significant at 5 percent; *Significant at 10 percent.

Source: National Bureau of Statistics, (2002), Household Budget Survey 2000/01, Dar es Salaam; Author's own calculations.

Table 5 gives education and health indicators. Once again, the indicators for the globalised regions are higher than those for the not so globalised regions. On average, 55 percent of adults in globalised regions have primary 5-8 level of education, while for the not so globalised regions, just 50 percent of adults have the same education. The difference in the mean

[8] The test statistic indicates whether there is no significant difference between the means in the two samples. The *t-test* statistics was calculated as follows:

$$t = \frac{(\overline{X_1} - \overline{X_2})}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$, with degrees of freedom calculated as $$df = \frac{(s_1^2/n_1 + s_2^2/n_2)}{\frac{(s_1^2/n_1)^2}{n_1 - 1} + \frac{(s_2^2/n_2)^2}{n_2 - 1}}$$, where s is the standard deviation of the sample, $\overline{X_1}$ and $\overline{X_2}$ are the sample means from globalised regions (sample 1) and not so globalised regions (sample 2), respectively, and n_1 and n_2 are the sample sizes from the globalised regions (sample 1) and the not so globalised regions (sample 2) respectively (see Aczel, 1993).

percentage of adults who have a primary education is not significant. In terms of access to health facilities, on average, 74 percent of households are within 6 kilometres of a dispensary or health centre in the globalised regions, while for the not so globalised regions, just 67 percent of households are in a reasonable vicinity of a health centre. However, the t-test shows that the difference in the means is not significant.

Table 5: Education and Health, 2000/01

Globalised	1	2	Not so Globalised	1	2
Kilimanjaro	55	94	Dodoma	52	41
Mbeya	58	86	Morogoro	49	67
Ruvuma	67	83	Singida	50	80
Shinyanga	45	61	Tabora	50	50
Mwanza	55	69	Rukwa	50	80
Iringa	64	60	Kigoma	59	92
Tanga	45	59	Arusha	58	65
Mtwara	51	84	Mara	59	66
Kagera	52	72	Lindi	33	63
Average	54.67	74.22	Coast	42	69
			Average	50.2	67.3
t-test	1.25	1.08			

Notes:

1 Distribution of Educational Level of Adults - % with Primary 5-8

2 Distance to Health Facilities by Place of Residence - % of households within 6km of a dispensary/health centre

** Significant at 5 percent; *Significant at 10 percent.

Source: National Bureau of Statistics, (2002), Household Budget Survey 2000/01, Dar es Salaam; Author's own calculations.

Table 6 gives two other key indicators, namely water and electricity. On average, 33 percent of rural households in globalised regions have piped water, compared to just 25 percent of households in not so globalised regions. The difference in the mean between the two regions is not significant. Another big disparity occurs in the use of unprotected water sources. In the globalised regions, an average of 51 percent of households use unprotected water sources compared to 57 percent of households in the not so globalised regions. In terms of sources of energy, the average percentage of households connected to the electricity grid is also higher in the globalised regions, at approximately 3 percent, while in the not so globalised regions, it is approximately 2 percent. The t-test shows that the difference in the means of these two indicators is not significant.

Table 6: Water and Electricity, 2000/01

Globalised	1	2	3	Not so Globalised	1	2	3
Kilimanjaro	60	25	13	Dodoma	54	40	1
Mbeya	50	31	1	Morogoro	27	38	0
Ruvuma	63	54	1	Singida	31	41	3
Shinyanga	22	63	0	Tabora	9	86	0
Mwanza	44	55	1	Rukwa	36	52	1
Iringa	16	49	3	Kigoma	41	26	4
Tanga	10	59	3	Arusha	35	50	2
Mtwara	22	55	1	Mara	13	70	4
Kagera	8	67	0	Lindi	8	89	2
Average	32.78	50.89	2.56	Coast	0	76	1
				Average	25.4	56.8	1.8
t-test	0.80	-0.71	0.53				

Notes:

01 Piped

2 Unprotected

3 % households reporting connection to the electricity grid

** Significant at 5 percent; *Significant at 10 percent.

Source: National Bureau of Statistics, (2002), Household Budget Survey 2000/01, Dar es Salaam; Author's own calculations.

Table 7 gives the differences in the housing conditions of the globalised and not so globalised regions. It gives the percentage of households living in houses built with modern materials.[9] Once again, on average, the percentage of households living in houses built with modern materials is higher in globalised regions. For instance, in the globalised regions, on average 17 percent of households live in houses with modern floors, approximately 21 percent live in houses with modern walls, and approximately 39 percent live in houses with modern roofs. This compares with approximately 8 percent, 15 percent and 21 percent respectively in the not so globalised regions. The t-test shows that the difference in the means between the globalised and the not so globalised regions for modern floors and roofs, is significant at 5 percent, while for modern walls, the difference in the mean is not significant.

The indicators provide a baseline for making comparisons in future. The differences in the welfare indicators provided in Tables 4 to 7 between globalised and not so globalised regions provide interesting findings. First, the findings show that globalised regions have a higher income than the not so globalised regions. This is interesting because in spite of the fall in export prices of crops, the globalised regions are still relatively better off.[10]

Table 7: Housing Conditions, 2000/01

Globalised	1	2	3	Not so Globalised	1	2	3
Kilimanjaro	38	36	84	Dodoma	7	18	24
Mbeya	19	37	37	Morogoro	7	18	31
Ruvuma	25	65	34	Singida	7	5	15
Shinyanga	9	2	18	Tabora	5	3	11
Mwanza	13	6	31	Rukwa	3	31	8
Iringa	15	26	44	Kigoma	4	41	13
Tanga	12	3	36	Arusha	11	11	41
Mtwara	8	5	17	Mara	20	19	34
Kagera	15	10	51	Lindi	7	1	8
Average	17.11	21.11	39.11	Coast	10	1	24
				Average	8.1	14.8	20.9
t-test	2.49**	0.73	2.30**				

Notes:

1 % households living in houses with modern floor

2 % households living in houses with modern walls

3 % households living in houses with modern roof

** Significant at 5 percent; *Significant at 10 percent.

Source: National Bureau of Statistics, (2002), Household Budget Survey 2000/01, Dar es Salaam; Author's own calculations.

The second interesting finding relates to the better social infrastructure enjoyed by households in the globalised regions. It might be tempting to conclude that globalised regions used the income earned from export crops in improving their living conditions. However, although this might be true for housing conditions and allocation of income to education, it cannot be entirely true for health and electricity installations as these are partly done by the government and non-governmental organisations (NGOs). The explanation for the better infrastructure could be that households may have contributed a percentage of the cost of health centres for example, and the government topped that up. This may not happen in the not so globalised regions if their income is not as relatively better. Another explanation could lie in political influence. Could it be that the globalised regions have more political clout (for example, more civil servants, vocal parliamentarians etc)? Or it could be that the more globalised regions have more endowments of factors than the not so globalised regions. Since this study does not control for abundance of natural and human resources, it would be interesting to incorporate such an analysis in a further study. Another explanation could be that the globalised regions have by and large been recipients of relatively more funds in the government's budget expenditure allocations. For example, Table 8 shows that 7 of the 9 globalised regions received an average of more than 5 percent of the total expenditure between 1995/96 and 2001/02, while a mere 4 of the 10 not so globalised regions received more than 5 percent over the same period.

[9] According to the 2000/01 HBS, modern floor materials include cement, tiles etc and exclude earth floor; modern walls include baked/burnt bricks and concrete bricks and concrete/cement/stone; modern roof materials include metal sheets, tiles, concrete, cement and asbestos sheets (p.160).

[10] This does not explain why the farmers were uprooting their coffee trees and planting tomatoes instead. A possible reason for this could be that they may have been anticipating a long-term downward decline in the prices of coffee.

Table 8: Percentage Allocations of Total Expenditure by Region

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	Average 1995/96-2001/02
Globalised								
Kilimanjaro	7.6	7.3	7.3	6.7	7.5	6.8	6.4	7.1
Mbeya	6.8	6.3	6.8	6.2	6.8	5.3	6.1	6.3
Ruvuma	4.7	4.5	4.4	4.2	4.6	4.1	4.3	4.4
Shinyanga	5.7	5.4	5.1	5.3	5.7	5.1	5.4	5.4
Mwanza	8.1	7.5	5.5	7.2	7.7	7.1	7.2	7.2
Iringa	5.1	5.3	5.6	6.2	2.8	5.1	6.2	5.2
Tanga	6	5.9	5.9	5.5	6.5	5.6	5.7	5.9
Mtwara	3.8	3.7	3.6	3.4	3.8	6.2	3.4	4
Kagera	1.1	5.3	6.2	7.4	7.5	8.1	6.6	6
not so Globalised								
Dodoma	5.3	5.1	5.2	4.8	5.3	5.1	4.8	5.1
Morogoro	5.8	5.7	5.8	5.4	5.9	3.5	5.1	5.3
Singida	3.6	3.5	3.5	3.3	3.4	3.2	3.2	3.4
Tabora	4.6	4.3	4.3	4	4.2	3.8	4.1	4.2
Rukwa	4	3.4	3.1	3.1	3.3	2.9	3	3.3
Kigoma	4	3.7	3.8	3.5	3.8	3.6	3.7	3.7
Arusha	6.2	6.2	6.1	6.1	7	7.8	7.5	6.7
Mara	5.7	5.2	6.2	6.7	6	5.4	5.5	5.8
Lindi	1.6	3	3	2.9	3	2.9	2.9	2.8
Coast	3.5	3.2	3.2	3.2	3.6	3.4	3.6	3.4
Total	100	100	100	100	100	100	100	100

Source: Ministry of Finance, Appropriations Accounts and Expenditure Flash Report.

Another interesting finding from the indicators relates to the percentage of adults with primary education. Globalised regions have more adults with primary education, which in general indicates that the people have a relatively higher education level and are more literate. This can be explained by the higher income from export crops.[11] It could be that households in globalised regions can afford to allocate more income to education. Also, given that the globalised regions are generally better off in income terms, their higher investment in human capital explains the higher income. Thus, in general, although their returns come from the soil in terms of the crops grown, the fact that they also invest in human capital tends to give them a higher income.

[11] A study by Al-Samarrai and Reilly (2000) found that differences in household income were an important factor in explaining differences in attendance rates between rural and urban areas in Tanzania (see also REPOA, 2003).

6.0 CONCLUDING DISCUSSION

In this study, a simple method of comparing the welfare effect of globalisation on rural households is employed. The simple way in which the comparison has been done is by first categorising the regions according to globalised and not so globalised ones. This was done by calculating the contribution of each region to export production. Those regions that contributed less than 20 percent to total production were classified as not globalised. Then various indicators of welfare from the 2000/01 household budget survey were used to compare the two.

In terms of the welfare indicators from the 2000/01 household budget survey, it was found that by and large, the globalised regions have better indicators. They generally have a higher expenditure per capita, spend less of their income on food, use modern materials for the housing needs, have a higher percentage of households using piped water, and they have a higher percentage of adults with primary education. Also, a higher percentage of the households in the globalised regions live close to a health centre, and are connected to an electricity grid. Although the welfare indicators of the globalised regions are on average better, it was important to establish the significance of the difference in the average. A t-test was used for this purpose. It was found that the difference in the average was significant for the following indicators; mean expenditure per adult equivalent (price adjusted), mean consumption expenditure per capita (nominal prices), percentage of households living in houses with modern floors, and percentage of households living in houses with modern roofs.

The study therefore concludes that while globalisation has negative and positive effects, the tentative findings indicate that it has helped to improve the lives of households in rural areas in more 'globalised regions'. The households in more globalised regions have a relatively higher welfare level than the households in the not so globalised regions. It is however important to note that this study does not control for some factors such as abundance of natural and human resources. If natural resources are more abundant in one region relative to another, results can be biased if the existence of natural resources is not controlled for. This fact could be considered and incorporated in an econometric analysis, with more data. Another extension that would be interesting is to include urban areas in comparing globalised and not so globalised regions.

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