Economic Effects of different aid channels on dependency, absorptive capacity and poverty reduction in Tanzania

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Abstract

A computable general equilibrium model of Tanzania was used to estimate potential impact of different aid delivery systems on aid dependency, aid absorptive capacity and poverty reduction. Alternative aid transfers were through government budget support to subsidize: production capital and intermediate inputs, domestic investment, domestic export price, and consumption of poor households. A major conclusion is that aid should have a multi-sectoral perspective in order to take advantages of inter-sectoral linkages and complementarities that exist within the economy. Aid concentration and uncoordinated efforts results in resource shifts; put more strains on resource managers, and limits aid absorptive capacity, which encourages aid dependency. Coordinated and targeted aid transfer may bring positive results in terms of economic growth and development and poverty reduction.

Introduction

The Development Assistance Committee (DAC) of the Organization of Economic Cooperation and Development (OECD) defines aid as a flow of financial and in-kind assistance that contains a grant element of at least 25% with the objective of promoting economic development and welfare of developing countries. Aid can change production pattern of a recipient country in case of food aid; increase incomes and therefore consumption of some institutions in case of direct transfers; and redistribution of available resources in case of development programs or specific intervention aimed at specific production sectors. Indirect effects of aid are mainly through increasing available funds to government that can be used to cut government budget deficit, which in turns reduces tax level or borrowing, and; improving managerial capacity of the government through technical cooperation. There are two major negative effect of aid. First, aid may reduce the potential of domestic saving by encouraging government expenditure and propagating aid dependency. Second, increase in foreign currencies may result in the appreciation of the local currency and thus weakening the export sector-a phenomenon known as Dutch Disease. Despite potential negative effects, justification of aid is based on the assumption that aid inflow creates more capital; more capital in turns perpetuate economic growth and development, a prerequisite for poverty reduction strategies.

Most studies use computable general equilibrium (CGE) models to assess the impact of aid on general welfare and poverty reduction. Siddiqui and Kemal (2002) assessed the impact of an increase in aid on poverty reduction in the presence and in the absence of trade liberalization using a CGE model for Pakistan. Results from this study suggested that when labor supply was homogeneous, poverty reduction appeared to be larger in the presence of trade liberalization. However, when labor was differentiated and was sector specific; in the absence of trade liberalization, a higher proportion of benefits of aid accrued to skilled labor and poverty increased by all measures for both urban and rural households. Andersen and Evia (2003) used CGE models to simulate the effect of additional aid in form of increased public spending and investment in Bolivia. With increased aid, GDP grew by 1% per year during the four years of extra aid. However, when the extra aid disappeared, the growth rates returned to their normal levels. The extra aid has a corresponding positive effect on average incomes of households, but those who benefited most were skilled workers and rich households. They concluded that due to resource shift and appreciation of exchange rate, aid tended to increase inequality and deepening poverty in Bolivia.

Bourguignon and Sundberg (2006) used CGE model to examine the macroeconomic and structural constraints to scaling up aid flows to developing countries to meet the Millennium Development Goals (MDGs). They showed that accelerating growth through productivity-enhancing infrastructure investment was key element towards achieving the MDGs. Large increases in aid risked undermining competitiveness and future growth and development. They suggested that skilled labor constraints necessitated careful aid sequencing to limit the scope for frontloading. It can been seen that most of the CGE studies tends to assess the impact of aid channeled thorough specific institution and there are no comparative analysis to answer the question of what would had happen if the same amount of aid have been channeled through others sectors or institutions. There is a literature gap on issues relating to impact of alternative aid packages under a similar economic conditions or structures. The main objective of this study was to develop a detailed CGE model of Tanzania that is suitable to

analyze the impacts of different aid packages and use the model to illustrate the potential economic impact of different aid channels on Tanzania economy. Four aid programs were channeled as a direct lump sum transfer to supports government budget; a form of aid commonly received by Tanzania. The government budget support was used to: subsidize agricultural and nonagricultural capital and intermediate inputs; subsidize domestic export price; subsidize domestic investment, and; subsidize consumption of poor households. The basic assumption was that each aid channel has a unique impact on aid dependency, aid absorptive capacity and poverty reduction.

Aid inflow, aid dependency and absorptive capacity

Over the past 45 years, in real terms, Tanzania has received annual aid ranging from $87 million in 1960 and $2,277 million in 2001. For 1960/04, the average aid per year was $1,160 million. Except for the brief period of 1995/96, there was a steady increase in aid inflow in form of grants. Ronsholt (2002) identifies three phases of aid inflows in Tanzania: the expansion phase (1960/82); the contraction phase (1983/85); and the adjustment phase (1986/96). The current phase (1997/08) can be called a consolidation phase. The DAC database show that increased donors' confidence led to an increase in aid flow from $1,168 million in 1996 to $2,062 million in 2004, which is about 76% increase. Overall, Tanzania has been receiving about 6% of all aid transferred to Sub-Saharan Countries. Tanzania received almost 10% of all aid transferred to Sub-Saharan Africa in 2001. The amount has been changing from 2% to 10%, but it seems to stabilize above 5%.

Aid allocation pattern to different sectors within the Tanzania economy has also been changing (Table 1). During 1970/04, economic infrastructure received 24% of the total aid. This sector was the most favored in the early 1980s to mid 1990s, when it received between 20% and 51% of the total aid. During the same period, on average, social infrastructures utilized about 21% of all aid allocated to Tanzania. Allocation to this sector varied from 6% to 46%. In 2001/04, aid allocation to this sector was more than 29% of the total allocation. Support for the production and agricultural sector has been dwindling overtime. For 1970/04, aid to the production sector was 18% of the total allocation. The lowest allocation to the production sectors was 2% in 2004 and the highest was 46% in 1989. Aid towards supporting commodity and general assistance programs constituted about 18% of the total aid. The highest allocation was 32% in 2000, which was for import and export support programs. It is clear that donor sectoral preferences have been changing overtime with unknown impacts.

Table 1 Summary of Tanzania total aid inflow to different sectors (1973/04)

Average per period	$ million in 2004 Price	Proportion relative to total aid								Aid/GDP ratio
		EIS	SIS	PSE	MSE	CAI	ARD	UFD	Others	
1973/74	2,861	0.15	0.35	0.29	0.04	0.14	0.00	0.05	0.00	0.16
1976/79	922	0.24	0.20	0.27	0.02	0.16	0.08	0.03	0.00	0.12
1980/84	948	0.24	0.13	0.28	0.03	0.22	0.06	0.02	0.01	0.14
1985/90	1,271	0.26	0.14	0.32	0.06	0.20	0.03	0.00	0.00	0.22
1991/94	1,303	0.41	0.16	0.12	0.06	0.15	0.11	0.00	0.02	0.25
1995/99	910	0.22	0.28	0.09	0.11	0.15	0.12	0.01	0.03	0.12
2000/04	1,818	0.13	0.33	0.06	0.03	0.23	0.18	0.01	0.04	0.20
Average (1973/04)	1,157	0.24	0.21	0.20	0.05	0.18	0.09	0.01	0.01	0.19
Standard Deviation	442	0.14	0.11	0.12	0.05	0.09	0.11	0.03	0.02	0.05
Minimum (1973/04)	502	0.03	0.06	0.02	0.00	0.02	0.00	0.00	0.00	0.12
Maximum (1973/04)	2,166	0.52	0.46	0.46	0.26	0.41	0.33	0.13	0.05	0.25

In the above Table, SIS is social infrastructure (education, health, population programs, water supply and sanitation, government and civil society and other social services), PSE is production sectors (agriculture, industry, mining, and construction, policy regulations and tourism), MSE is multisector support programs (general environment protection, women in development and other multisector support), CAI is commodity aid (general budget support, food security assistance and other commodity assistance), ARD is action related to debt relief, UNF is unallocated fund, and OTHER include aid to cover administrative costs, emergency assistance and reconstruction and support to Nongovernmental Organizations (NGOs).

Bräutigam (2001) defines aid dependency a situation in which a country cannot perform many of the core functions of government, such as operations and maintenance, or the delivery of basic public services, without foreign aid funding and expertise. A ratio of aid to GDP is commonly used as a proxy for aid dependence. Aid dependence can potentially undermine the quality of governance and public sector institutions by weakening accountability, encouraging rent-seeking and

corruption. Aid dependence also foments conflict over control of aid funds, siphons off scarce talent from the bureaucracy, and alleviates pressures to reform inefficient policies and institutions. States that are capable of raising substantial proportion of their revenues from the international community are less accountable to their citizens, are likely to have no incentives to cultivate and invest in effective public institutions and maintain popular legitimacy. As a result, substantial increases in aid inflows over a sustained period could have a harmful effect on institutional development across the board (Knack 2001).

In business administration, absorptive capacity is defined as a limit to the rate or quantity of scientific or technological information that a firm can absorb. Cohen and Levinthal (1990) define absorptive capacity as the fraction of knowledge in the public domain that the firm is able to assimilate. Absorptive capacity therefore represents the link between firm's ability to value, assimilate, and apply new knowledge and firm's innovation performance, firm's aspiration level, and organizational learning. This mean that absorptive capacity decline as the firms stock of knowledge approaches a certain level. While the stock of new knowledge is finite, the saturation point is fixed. Therefore, diminishing marginal returns set in beyond a fixed saturation point. At the national level, aid absorptive capacity refers to the ability of a recipient country to efficiently spend aid money and effectively stimulate economic growth and development or reduce poverty. Quantitatively, it is commonly interpreted as an upper limit of the aid/GDP ratio (an indicator of aid dependency) of a recipient country when signs of diminishing marginal returns start to be evident. Radelet et al. (2004) show that at a certain level of aid/GDP ratio is reached, additional aid has little or no effect on economic growth and development. Some studies indicate that an aid saturation point could be reached when aid reach anywhere between 15% and 45% of the recipient country's GDP, beyond which the marginal benefit of aid inflows became negative. Islam (2003) suggests that absorptive capacity is reached when aid/GDP ratio is in excess of 22%. The World Bank (2004) argues that that, in each country, aid saturation point is a function of different variables that directly or indirectly affects absorptive capacity. These variables can arise from macroeconomic, institutional, infrastructure, human capital, or socio-cultural constraints. From Table 2, it seems that aid absorptive capacity was reached between 1991 and 1995. Therefore, aid absorptive capacity and aid dependency are related. Aid absorptive capacity is the upper limit of effective aid dependence ratio.

General Welfare and Poverty Analyses in a CGE Framework

Huff and Hertel (1996) first derived the money metric and compensation measures of welfare change in the GTAP model. Hanslow (2000) generalized this application to all CGE models. This approach uses the production, utility functions, and foreign income flows to disaggregate the welfare into three major components. First, allocative efficiency: measured as the initial indirect tax multiplied by the policy-induced change in the quantity of goods or services. The initial indirect tax is the difference between the contribution to output from an additional unit of the good, and the price for which the good could be obtained in the absence of the tax. Allocative efficiency therefore measures the net contribution to output from changes in resources used in production. Second, term of international trade: the contribution to national welfare arising from changes in relative prices including export relative to import prices. Third, marginal utility of income effect: as economic agents adjust their purchasing and sale patterns in response to scale up-aid there is a change in welfare. Allocative efficiency effects will be generally positive, if aid improves efficiency of resource allocation within the domestic economy. On the other hand, the terms of trade may improve or deteriorate, depending on the global economic condition. If the change in the terms of trade is negative and relatively large; then, there is a possibility that the welfare loss from the deteriorating terms of trade dominates the benefit from resource allocation efficiency. In case of non-homothetic household preferences, when income changes, changes in consumption patterns depend on whether goods are superior or inferior. When aid lead to increases (decreases) in household income, the proportion of income spent on inferior (superior) goods decreases (increases), implying more (less) income available for all other goods. This creates additional positive (negative) effects on welfare. In the case of homothetic preferences, there is no additional welfare effect from a change in marginal utility of income, as consumption patterns do not change. Total welfare is the sum of changes in resource allocative efficiency, term of international trade and income effect.

Various definitions and concepts exist for defining poverty. This study focuses on what is typically referred to as incidence of poverty, that is, whether households or individuals possess enough resources or abilities to meet their current needs (Decaluwé et al. 1991). This definition is based on individuals' income, consumption and/or other attributes. These attributes are compared to defined thresholds below which individuals are considered as being poor in that particular attribute. Although these concepts, measures, and analytical tools can be applied to numerous measures of poverty, such as income, consumption, health, education, and assets ownership, the standard means of determining whether a household is poor involves a comparison of its estimated poverty equivalent scale (or welfare measure) to a poverty line. There are two kinds of poverty lines: one is an absolute poverty line and the second is a relative poverty line. The absolute poverty line is based on a basket of quantities of commodities reflecting basic needs or minimum consumption requirements for each individual member of the population. A relative poverty line is determined in relation to a certain percentage of the mean, mode or median of per capita expenditure or income within the country. Decaluwé et al. (1991) shows that a beta function adopts fairly well under asymmetric situations by generating skewed distributions, and is more flexible in terms of utilizing

socio-economic information contained in the household level data. However, when the welfare distribution is symmetric, the beta function collapses to the most popular money-metric poverty index (or incidences of poverty) suggested by Foster, Greer and Thorbecke (1984) defined as

$$P_{\alpha} = \left[\frac{M}{N} \left(\frac{z-w}{z} \right)^{\alpha} \right] \quad (1)$$

In Equation 1, P_{α} is the measure of deepness of poverty; z is the poverty line or a poverty threshold, w is the welfare measure, α is the poverty aversion parameter or a measure of inequality parameter, M is the number of poor individuals, and N is the total population. When α=0, then P_{α} measures the incidence of poverty or headcount ratio, which is given by the proportion of the population who are poor. When α =1, P_{α} measures the poverty gap or poverty depth given by the aggregate income shortfall of the poor as proportion of the poverty line and normalized by the population size. It is also an indicator of the minimum cost of eliminating poverty using perfectly targeted transfers. When α =2, the index measures the severity (or intensity) of poverty and gives more weight to the poorest of the poor.

The basic need poverty line developed by the Tanzania Bureau of Statistics was adopted. For 2001, and using the same data used to construct the 2001 SAM, the food poverty line were, respectively, 99,566 Tshs/year in urban areas and 90,948 Tshs/year in areas. For simulation purposes, the poverty line itself (z) was determined endogenously within the CGE model. Since the commodity prices are endogenously determined within the model, so should the monetary value of the line. We can define the base year monetary value of the basic need basket as a proportion of total household expenditure. Since the basic need basket remain invariant from on simulation to another, it can be easily shown that the poverty line after the model simulation can be estimated by adjusting the original basic need poverty line using the Laspery's price index. If the income distribution of a particular household group has a specific distribution, a positive external shock on the economy may shift the distribution either to the left or to the right. Also, changes in price or income will shift the poverty line to the right or to the left. Poverty vulnerability can be estimated as a difference between the areas of the old and new distributions evaluated, respectively, at the old and new poverty lines. The estimated area measures the proportion of the population that moved into or out of poverty. In addition, if the shift in income is symmetric – dispersion parameters of old and new distributions are similar, poverty vulnerability can be estimated as the area between new and old poverty lines using the old distribution.

The CGE model structure, closure rules, calibration and simulation

Common benchmark data for most CGE most models is the Social Accounting Matrix (SAM). The fundamentals of SAM theory and applications of SAM in CGE modeling can be found, respectively, in Pyatt and Round (1979), Abbink et al. (1995) and Stifel and Thorbecke (2003). This study used the 2001 Tanzania SAM, which is documented in Thurlow and Wobst (2003). This SAM was updated using the 2004 macroeconomic variables using procedures suggested by Robinson, Cattaneo and El-Said (2001). These macroeconomic variables included GDP at factor cost, total crop and livestock production, total tax collection and government expenditure, total investment and other related macroeconomic variables as reported by different institutions and agents supervised by the Bank of Tanzania. We followed standard approach to develop a static CGE model of Tanzania. The model contained a system of simultaneous equations divided into four blocks: price; production and trade; institution; and, the economic system constraints. The price block consisted of equations in which endogenous model prices were linked to other prices and non-price model variables. The production block covered four activities: domestic production and input use; allocation of domestic output to home consumption, to domestic market, and to export; the aggregation of supply to the domestic market; and, the definition of demand for traded inputs that was generated by the distribution processes. The institution block had equations that defined income distribution to factor of production and owner of factor of production, intra-institutional transfers and household consumption expenditures on both domestically produced and imported commodities. Other equations represented investment demand and saving rates and government expenditure. The fourth block contained equations that balanced the market for factors of production, market for commodities (demanded equals supply), and government expenditure (revenue equal expenditure).

In CGE modeling, model closure refers to the specification of accounting and behavioural relationships between economic variables, which determine how a model adjusts to economic shocks. In a Walrasian system, there are more equations determining the relationships between variables than there are free variables to be determined. Different closu res represent alternative theoretical treatments of this basic over determination of the Walrasian system. To solve the model, the variables are split into endogenous and exogenous variables equalling the number of equations and one of the redundant conditions is dropped. In addition, a numéraire price index is held fixed. For this study, since the model was geared towards solving the intermediate impacts, land and capital were activity specific and fixed. Labour was mobile across production activities according to changes in factor demand. Unemployment was also possible. In addition, two macroeconomic accounts were balanced. The government surplus or deficit and spending were determined exogenously. Tax rate, employment and capital stock adjusted endogenously to allow factor movement and balancing government spending. For the

saving-investment balance, closure was such that the value of saving adjusted to the level of investment. This means that the economy was investment driven, which helped to account for potential capital inflow under alternative aid package.

Calibration is a procedure whereby model parameters are determined from baseline SAM data, which is assumed to be at equilibrium. To calibrate the model, all prices were set equal to unity and the base year factor levels and SAM flows were substituted into the model as equilibrium values of model variables. The equations were then solved in reverse for input-output coefficients, shift and share parameters for Cobb-Douglas, constant elasticity of substitution (CES) and constant elasticity of transformation (CET) functions, and other endogenously determined parameters. The CES Armington functions were used to model imperfect substitutability between imports and domestic produced goods. The CET functions were used to approximate imperfect transformability between products for export and domestic markets. These specifications serve to partially insulate the domestic price system from exogenous changes in world commodity prices. The degrees of insulation were determined by the CES and CET function's substitution and transformation elasticities. These elasticities estimate were selected using a try and error procedure. To check the accuracy of the parameterization, all quantity variables and prices were assumed to be endogenous and the model was solved in MPSGE/GAMS (Rutherford 1998) software to maximize household consumption. If the model has been properly calibrated, this solution would exactly reproduce the base year factor levels as presented in the original SAM.

Results and Discussion

In the model, savings and investment decisions made by households determined aggregate capital stocks. Overall capital stocks were a function of new net investment and depreciation of existing capital. Net investment has to be sufficient to generate additional capital to meet future demand and depreciation of existing capital. Adjustments to meet these demands were almost similar across the four simulations. Capital adjustment has to grow faster under subsidies to consumption of poor households and domestic investment as compared to subsidies to productive capital and intermediate inputs. Tax adjustment to balance the government budget was needed under subsidies to productive capital and intermediate inputs and subsidies to consumption of poor households. In order to balance the budget, aggregate tax rates have to increase by 25% for the former and 29% for the latter. Under these scenarios, increased price levels caused by increased commodity demand; scaled-up aid was outpaced by government expenditures.

Table 2: Results of Static Model on Indicator of Welfare, dependency and absorptive capacity

Macro Variables	***Aid used to subsidize***			
	Capital and intermediate inputs	***Domestic investment***	***Domestic export price***	***Consumption of poor households***
Increase/decrease in capital stock (%)	3.48	4.19	3.86	4.40
Tax adjustment	0.25	0.00	0.00	0.29
Resource allocation efficiency (%)	-0.28	-1.00	-1.00	5.41
Term of international trade (%)	-0.92	-0.97	-0.99	-0.98
Income effect (%)	-0.83	-0.92	-0.93	-0.94
General macro welfare (%)	-2.04	-2.89	-2.92	3.49
GDP at factor cost (Trillion TZS)	2.20	1.23	1.05	0.94
Aid/GDP ratio	0.10	0.18	0.21	0.24

Except for the subsidies to consumption of poor households, other type of subsidies had negative effects on general welfare. Positive effect from subsidies to consumption of poor households was from improved resource allocative efficiency. The increased consumption by poor households was associated with increased production of domestically produced goods that used the subsistence factor. The most affected commodities were cassava, fruits and vegetables . For subsidies to capital and intermediate inputs, negative effects were due to decreased terms of trade and income effect. Due to limited capital base and necessary technology to increase supply of additional inputs, subsidies on productive capital and intermediate inputs encourage importation of agricultural and non-agricultural capital and most of the intermediate inputs (e.g., fertilizer) that were used to produce goods for domestic market rather than for export market. Likewise, subsidies on domestic investment and domestic export price have similar effects on general welfare. They both increased price of domestically produced goods and also increased imports.

In general, as demand for productive resources increased and some of the resources shifted to the subsidized sectors, supply of other goods (especially untraded goods) decreased, which increased price in the domestic market. Also, increase in

income was not fast enough to counter the effect of inflation. There was a substantial increase in import of foods crops such as maize, rice, wheat and beans that had a great impact on term of trade. In general, subsidies to capital and intermediate inputs have the least negative effect when compared to subsidies to domestic investment and domestic export price. Only, a subsidy to consumption of poor households has a positive effect. Under these scenarios, improvement in resource allocation efficiency outweighed the associated negative effects from decreased term of trade and income effect. The major causes of these negative effects were due to a rapid increase in price levels and resource shifts from unsubsidized to subsidized sectors, and increased demand for domestically marketed output rather than own produced goods. Also notice that subsidies to consumption of poor households and domestic export price perpetuated aid dependency because they have little impact on economic growth/change in GDP. Subsidies to productive capital and domestic investment decreased aid dependency and a increased a timeframe to reach aid absorptive capacity limit. If the policy objective is to improve the general welfare, then subsidies to consumption of poor households would be preferred. If welfare and aid dependency are central then subsidies to capital and intermediate inputs and domestic investment would be preferred to subsidies to domestic export price.

Poverty analyses results are presented in Table 3. In the base data, 34% of the households in rural areas and 14% of the households in urban areas lived in poverty. Income has to increase by 30% in rural areas and 28% in urban areas to eliminate poverty and targeted income transfers. Due to high income variability, poverty was more severe in urban than in rural areas. Subsidies to domestic export price have the highest impact on overall mean income. However, it highly increased both poverty gap and severity of poverty. This can be attributed to the fact that most of the resources used to produce commodities for export are owned by rich households. In additional, labor, a major resource owned by poor households was substituted for cheap capital as export of traditional commodities expanded. Subsidies to consumption of poor households have also high impact on household's income. Income of poor households in rural areas increased by 79% and in urban area, income increased by 54%. For overall population, income in rural areas increased by 45%, and income in urban areas increased by 35%. Despite a dramatic shifts in poverty lines due to increase in price levels, poverty gap decreased by, respectively, 131% and 188% in rural and urban areas. The impacts of subsidies to domestic export price were moderate. While it increased income of all households, it also reduced both poverty gap and severity of poverty in rural and urban areas. Notice that subsidies to productive capital and intermediate inputs increased poverty gap and severity of poverty, especially in urban areas.

Concluding Comments

Computable general equilibrium (CGE) model are powerful tools for policy analyses. In this study we developed and used a CGE of Tanzania to quantify the impact of different aid channels on aid dependency, absorptive capacity and poverty reduction. Aid was channeled as a lump sum transfer to the government, which used the monies to subsidize productive capital and intermediate inputs, domestic investment through cheap loans, domestic export price, and consumption of poor households. Potentially, each channel has positive and negative effects. Results from this study indicate that subsidies to productive capital and intermediate inputs is pro-economic growth, that is, it may be a useful macroeconomic tool to increase production and thus GDP. Subsidies to consumption of poor households were a pro-poverty policy instrument. While subsidies to domestic investment had moderate impact on economic growth and reduction of poverty, support of domestic export price was the worst instrument. A mix of the three policies, that is, subsidies to productive capital and intermediate inputs, subsidies to domestic investment, and subsidies to consumption of poor households, may produce desirable impacts by encouraging both economic growth and reduction of poverty. Rapid economic growth tends to limit aid dependency and prolong the time taken to reach the upper limit of aid absorptive capacity.

There are several limitations of CGE models that are documented elsewhere. However, the results from this study provides reference or starting points for planners and policy analyst in Tanzania, in terms of developing high impact development pathways and efficient utilization of scale-up aid. Importantly, a constant shift of donor preferences and supports obviously creates unstable disequilibria in Tanzania economy. The government of Tanzania and the donor community need to chart out a stable, sustained and predictable long term aid programs for Tanzania. It is essential that aid remains predictable and do not fluctuate too much. Moreover, the changing international financial environment and the requirement to show aid impacts, aid absorptive capacity would play a greater role in aid allocation. Countries with high absorptive capacity would be more likely to receive more aid than other countries. The government of Tanzania needs to sit back and reevaluate the past performance and plan for the future. Leaders and managers need both novelty and audacity to exploit this period of scaled-up aid to invest in those economic sectors with high economic impacts. Given the complex natures of relationships that exist among different donors; civil stability and support, transparency, and accountability are needed to ensure flow of aid. For donors, it not a time to determine aid saturation point, but rather a period of creating alliances to identify obstacles and weakness towards aid dependency and aid absorptive capacity and ameliorating them. Research and policy support will play a crucial role in this undertaking. To jump out of poverty, Tanzania has to maintain high economic growth and a steady pace of structural reforms for many years. Aid will play a crucial role by complementing

domestic resource mobilization and capacity building. Multiregional computable general equilibrium model of Tanzania would be able to shed light on the impact of aid at the community level.

Table 3: Poverty Analysis Results

Variables	*Rural households*		*Urban households*	
	Value	*Percent change*	*Value*	*Percent change*
Base income and poverty level				
Mean income in Tshs (all households)	196,543		378,654	-
Mean income in Tshs (poor households)	92,345		115,234	-
Poverty line	104,687		125,456	-
Head count	34%		14%	-
Poverty gap	-30%		-28%	-
Severity of poverty	26%		57%	-
Subsidies to capital and intermediate				
Mean income in Tshs (all households)	255,506	30%	502,095	33%
Mean income in Tshs (poor households)	103,426	12%	131,966	15%
Basic need poverty line	134,454	28%	137,839	10%
Poverty gap	-31%	3%	-37%	31%
Severity of poverty	28%	5%	98%	71%
Subsidies to domestic investment				
Mean income in Tshs (all households)	229,955	17%	443,025	17%
Mean income in Tshs (poor households)	120,049	30%	139,433	21%
Basic need poverty line	145,259	39%	175,686	33%
Poverty gap	-20%	-35%	-21%	-25%
Severity of poverty	12%	-58%	32%	-67%
Subsidies to domestic export price				
Mean income in Tshs (all households)	255,506	30%	526,329	39%
Mean income in Tshs (poor households)	93,730	1%	118,000	2%
Basic need poverty line	101,395	-3%	125,063	-10%
Poverty gap	-52%	161%	-45%	59%
Severity of poverty	79%	579%	144%	345%
Subsidies to consumption of poor household				
Mean income in Tshs (all households)	285,380	45%	509,290	35%
Mean income in Tshs (poor households)	165,279	79%	177,875	54%
Basic need poverty line	193,494	85%	182,952	55%
Poverty gap	16%	-131%	25%	-188%
Severity of poverty	8%	-90%	45%	-69%

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