The Nexus between Growth, Inequality, and Poverty: Lessons from Long-term Trends in Tanzania, 1961-2017

Sascha Klocke, Lund University

Sascha.klocke@ekh.lu.se

Morten Jerven, Norweigian University if Life Sciences

morten.jerven@nmbu.no

The Nexus between Growth, Inequality, and Poverty: Lessons from Long-term Trends in Tanzania, 1961-2017

Sascha Klocke and Morten Jerven

Abstract

What is the relationship between growth, inequality, and poverty? This is perhaps one of the most important questions of economic development that, in the context of sub-Saharan Africa, it has gained prominence against the backdrop of two decades of almost uninterrupted growth since the turn of the millennium. Despite strong growth, there have been doubts as to whether it translated into substantial poverty reduction. A missing piece in this puzzle is economic inequality, which, while often neglected in the past, is currently at the centre of attention in economic research. The aim of this paper is to re-evaluate the existing quantitative evidence and to disentangle the competing narratives concerning growth, inequality, and poverty for Tanzania, which provides an interesting case that is at once representative of the wider sub-Saharan African growth experience, while simultaneously highlighting the complexity of the growth-inequality-poverty nexus.

Our contribution is threefold. First, we provide a unique long-term study of growth, inequality, and poverty covering (almost) the entire six decades of Tanzanian independence. Second, we show how a triangulation of data sources can help establish aggregate patterns of development more firmly in the face of wide-spread concerns that data on sub-Saharan African economies are not only lacking, but also of questionable reliability. We further introduce an indicator that has received little attention in the economic development literature so far: the inequality extraction ratio. We provide estimates for the inequality extraction ratio and employ it as a novel tool to analyse the complex linkages between growth, inequality, and poverty in African countries. Third, we highlight the role of different policies in determining the interrelations between growth, inequality, and poverty – and element that is often missing from dominant approaches to modelling the different linkages.

We draw several general conclusions. First, the nature of the different linkages between growth, inequality, and poverty is not predetermined, but depends on the development strategies and concrete political decisions employed. The Tanzanian experience confirms that growth does not always "trickle down" to the poor. For economic growth to realise its full potential in terms of poverty reduction, the development strategy is essential. Still, we see that, in a very poor country, growth is an important precondition for people to be able to move out of poverty. Second, the role of inequality in the development process is ambiguous and observed levels of income inequality are difficult to interpret. In Tanzania, high levels of income inequality after independence were not a constraint on economic growth, while the reduction in inequality resulting from the collapse of African Socialism came at the cost of almost two decades of economic stagnation. Third, the inequality extraction ratio is a useful tool to make sense of this ambiguous role of income inequality and to contextualise trends in income inequality into the wider processes of growth and poverty reduction. Thus, while income inequality in Tanzania always appeared relatively low, this was often because the Tanzanian economy produced little surplus above subsistence which would have allowed for higher levels of inequality.

1. Introduction

What is the relationship between growth, inequality, and poverty? This is perhaps one of the most important questions of economic development. Since its beginnings, the emphasis within development as a political project lay overwhelmingly on economic growth and capital accumulation. In the 1990s, the focus shifted gradually towards poverty reduction. The Millennium Development Goals (MDGs) asserted the centrality of poverty and the Sustainable Development Goals (SDGs) subsequently reaffirmed it. Economic growth still maintains a central position, but now more so as a means to reduce poverty. Inequality thus far played a secondary role. With SDG 10, it has finally moved closer to the centre stage, introducing an articulated target to "sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average" (United Nations, 2015, p.23). While it is still not a direct target of development practice as such, its importance as an analytical variable when assessing whether growth is beneficial for the poor or not has grown considerably.

The gradual shift in focus from economic growth towards poverty reduction brought one region into the spotlight of global development efforts: sub-Saharan Africa. The World Bank began conducting its Living Standard Measurement Studies in the 1980s, and it quickly became clear that poverty was widespread on the continent (Jerven, 2018). Why was Africa so poor, and what could be done to change this? For many economists, the answer was clear: poverty in Africa was due to a persistent growth failure (Collier & Gunning, 1999; Easterly & Levine, 1997; Sachs & Warner, 1997), and the solution was stronger economic growth (Dollar & Kraay, 2002). Yet, strong and sustained growth seemed out of reach, leading *The Economist* (2000) magazine to call Africa "the hopeless continent" on its cover.

While *The Economist* was passing its pessimistic judgment, Africa had already entered what would turn out to be two decades of strong, uninterrupted growth. The hopeless continent experienced an "African growth miracle" (Young, 2012, p.696) and the cover of *The Economist* (2011) now declared "Africa rising". Despite the impressive growth record and reductions in the relative share of people living in extreme poverty, their absolute numbers have not decreased significantly (Beegle et al., 2016; Clementi, Fabiani & Molini, 2019). Consequently, the narrative of the African miracle has increasingly been questioned (Fosu, 2018a; Frankema & van Waijenburg, 2018; Rodrik, 2018) and a new question has emerged: why did two decades of uninterrupted growth not result in more substantial poverty reduction?

A missing piece in this puzzle is the study of economic inequality, which is currently at the centre of attention in economic research, not least because of the many high-profile publications on the subject (Atkinson, 2015a; Milanovic, 2016; Piketty, 2014, 2020; Stiglitz, 2013). How inequality interacts with growth and poverty reduction is still a matter of debate. Initially, it was widely assumed that inequality in poor and less developed countries would be relatively low, following theoretical considerations on the relationship between growth and inequality proposed by Simon Kuznets (1955). Yet, the re-emergence of older inequality estimates has shown that inequality in many developing countries has been unexpectedly high for more than half a century (van de Walle, 2009).

This led to a renewed interest in studying long-term trends in inequality in developing countries, as well as its connection to growth and poverty reduction. However, a consensus on patterns, trends, and their explanations has yet to emerge. Despite the resurging importance of inequality in global development debates, and even though Africa is home to some of the countries with the highest economic inequality in the world (Obeng-Odoom, 2020), empirical long-term studies focusing on the continent are still wanting. Most research has focused on OECD countries and the few studies covering sub-Saharan Africa often limit their analysis to two or three decades. An example is the United Nations Development Programme report on inequality trends in sub-Saharan Africa (Odusola et al., 2017). The report provided the first comprehensive overview of income inequality on the continent, but only covers the period from the mid-1990s onwards. Similarly, Simson and Savage (2020) limit their analysis to the same period, citing problems of data availability and quality for earlier decades.

We propose to enrich the field with a long-term historical case study spanning almost six decades for one sub-Saharan African country, Tanzania. Tanzania provides an interesting case that is representative of the wider sub-Saharan African growth experience, while simultaneously highlighting the complexity of the growth-inequality-

poverty (G-I-P) nexus. At the time of independence, the country had high levels of income inequality (Atkinson, 2011, 2015b; Atkinson & Lugo, 2010). Since then, it managed to overcome this colonial legacy and now has one of the lowest levels of income inequality in sub-Saharan Africa (Odusola et al., 2017). Like many African countries, Tanzania experienced over a decade of strong economic growth after independence (Jerven, 2011), although poverty remained a persistent problem (Nyerere, 1977). Since 2000, Tanzania has been part of the African miracle, but strong growth over these last two decades reportedly resulted in little change in grassroots poverty, mirroring the experience of the continent at large (ed. Arndt, McKay & Tarp, 2016; Atkinson & Lugo, 2010; Dulani, Mattes & Logan, 2013). Tanzania's transformation from a high to a low inequality country and its two growth episodes, both under different initial levels of inequality and with uncertain outcomes regarding poverty reduction, provide a suitable setting for the investigation of the interrelations between growth, inequality, and poverty (reduction).

A challenge when studying historical developments in Tanzania is that a host of competing narratives exists concerning economic performance under different policy regimes as well as their short- and long-term impacts on inequality and poverty. Two periods in particular are hotly contested: African socialism, or *ujamaa*, (c. 1967-78) and structural adjustment (c. 1986-1996) (Bigsten & Danielson, 2001; Bryceson, 2010; Collier, Radwan & Wangwe, 1990; Ellis & Mdoe, 2003; Ferreira, 1996; Harrison, 2001; Hyden & Karlstrom, 1993; Sarris & van den Brink, 1993; Sender & Smith, 1990). We argue that a major reason for these competing narratives is the lack of long-term perspectives on the changes taking place. This is illustrated most succinctly by the many studies evaluating the impact of the structural adjustment programmes. Scores were produced *during* their implementation in the late 1980s and early 1990s (see, for example, Bienefeld, 1989; Ferreira, 1996; Sahn & Sarris, 1991; Sarris & Tinios, 1995; Sarris & van den Brink, 1993) or just after in the late 1990s and early 2000s (see, for example, Harrison, 2001; Kaiser, 1996; Meertens, 2000). On average, these studies find mixed to negative effects of the reforms. More recent studies, in contrast, have argued that structural adjustment had a positive impact on development in the long run (Archibong, Coulibaly & Okonjo-Iweala, 2021; Easterly, 2019).

The aim of this paper is thus to re-evaluate the existing quantitative evidence to disentangle the competing narratives concerning G-I-P in Tanzania. Our contribution is threefold. First, we provide a unique long-term study of G-I-P covering (almost) the entire six decades of Tanzanian independence, from 1961 to the present day.[1] In doing so, we use the benefit of hindsight to better evaluate especially the long-term impact of different policy regimes on our chosen indicators.

Second, it is widely appreciated that data are not only lacking, but that the data that we do have in international databases are also questionable, even for GDP growth. Here, we show how a triangulation of data sources can help establish aggregate patterns of development more firmly and present the series we consider most representative of the actual G-I-P trends in Tanzania. We also introduce an indicator that has received little attention in the economic development literature so far: the inequality extraction ratio (IER). In brief, the IER measures how close the observed level of inequality in a society is to the inequality possibilities frontier (IPF), the maximum feasible level of inequality in a society as a function of subsistence income and the mean income. We provide estimates for the IER and employ this indicator as a novel tool to analyse the complex linkages between growth, inequality, and poverty in African countries.

Third, we highlight the role of different policies in determining the interrelations between growth, inequality, and poverty. Often, the dominant approaches modelling the different linkages leave little room for policy, instead focusing on economic mechanisms or the path-dependent nature of economic development. Kuznets (1955), for example, considers the level and trend in income inequality as determined by the state of development and the process of economic growth. Engerman and Sokoloff (2002) and Acemoglu, Johnson, and Robinson (2002), on the other hand, consider present-day levels of economic development, inequality, and poverty as the direct result of historical circumstances, like the nature of colonisation, that sometimes lie centuries in the past. We seek to remedy this absence of policies by contextualising and discussing our G-I-P estimates in relation to changing

---

[1] Typically, studies in this field have only covered a decade or two.

development strategies and concrete development policies, therein highlighting the potential of political action in determining development paths.

The article proceeds as follows. We first present an analytical framework for the study of G-I-P and argue that triangulation is crucial to interpret these trends. We then present the data series used in our analysis of long-term trends in G-I-P. Here, we also introduce the IER and show that it helps to gauge the plausibility of G-I-P trends over time. In Section 4, we discuss the policies underlying the trends and interactions between growth, inequality, and poverty. Section 5 concludes.

2. The Growth-Inequality-Poverty Triangle

The question of how growth, inequality, and poverty interact is a pertinent one, which has proven to be more complex than once thought. To facilitate the discussion of these complex interrelations, we can use a visual representation of them, the G-I-P triangle, initially introduced by Bourguignon (2004) and expanded upon by Thorbecke and Ouyang (2018). The triangle is shown in Figure 1. It will serve as a helpful diagnostic tool to triangulate the data series in Section 3 and to think about the changing development strategies in post-colonial Tanzania in Section 4.
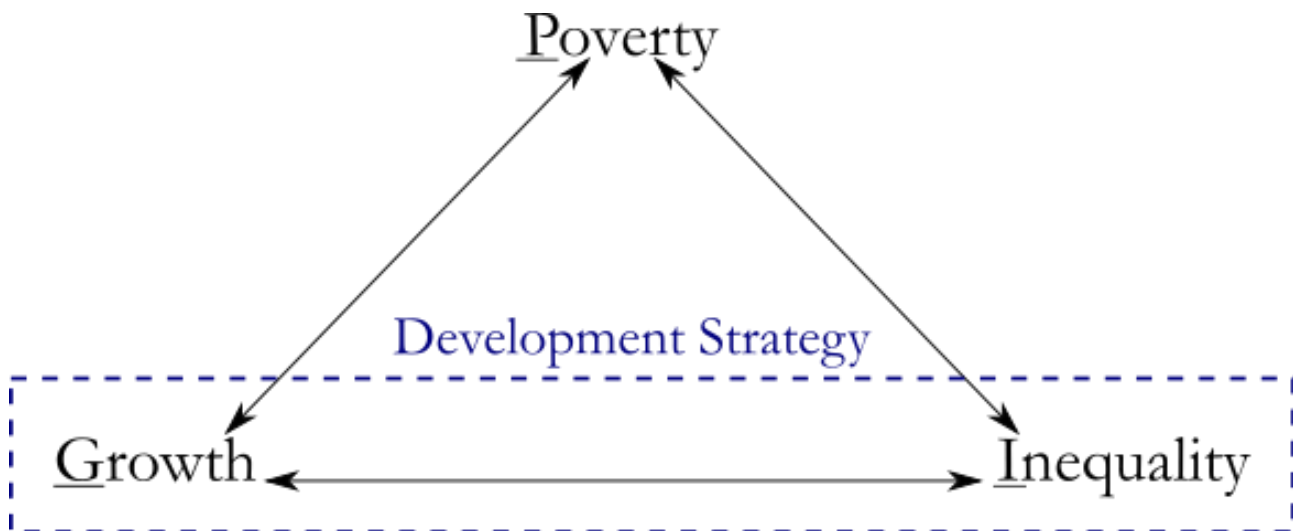

Figure 1: The growth-inequality-poverty (G-I-P) triangle.
Source: Adapted by the authors from Bourguignon (2004) and Thorbecke and Ouyang (2018).

Of all the different relationships in the triangle, the growth-poverty link is the most studied and best understood (Thorbecke & Ouyang, 2018). Economic growth – an increase in mean income in a society – is one of the principal ways to reduce poverty, that is, to lower the number of people whose income falls below a certain threshold. How large of an impact growth has on poverty reduction depends chiefly on its structure and speed, which is determined by the development strategy. In general, if growth is both rapid and inclusive, it will result in higher rates of poverty reduction. Inclusive growth here means that it "results in a wider access to sustainable socio-economic opportunities for a broader number of people" (ed. African Development Bank, 2012, p.2). Inequality has been argued to be the main determinant of whether growth is inclusive and of the magnitude of the growth elasticity of poverty (the extent to which growth reduces poverty) (Okojie & Shimeles, 2006; Thorbecke & Ouyang, 2018; van de Walle, 2009). Clementi, Fabiani, and Molini (2019) provide an extensive discussion of the empirical findings concerning the impact of inequality on the poverty-reducing effects of growth. To summarise the different positions briefly, one strand of literature proposes that all strata of society benefit (proportionally) from economic growth and that income distribution does not play a major role (Dollar, Kleineberg & Kraay, 2013; Dollar & Kraay, 2002). A

second strand, in contrast, finds evidence that high levels of inequality limit the poverty-reducing effect of growth (Bourguignon, 2004; Ravallion, 2001, 2005).

Inequality does not only have a mediating effect for the growth-poverty link, however. There are also direct links from growth to inequality and from inequality to growth. Kuznets (1955) illustrated the growth-inequality link prominently. He argued that modern economic growth leads to sectoral change and urbanisation, which in turn leads to an increase in income inequality. Once this development reaches a certain threshold of per capita income, the effect reverses and further growth leads to a reduction in inequality. In this scenario, then, the impact of inequality on poverty reduction is negligible and transitory, as everyone ultimately benefits from rising incomes.

Concerning the reverse link from inequality to growth, two competing theories have been proposed. On the one hand, the neoclassical approach argues that inequality is beneficial for growth. First, those with higher incomes and wealth have a higher propensity to save and invest than the poor, thus leading to higher rates of growth (Thorbecke & Ouyang, 2018). Second, inequality provides positive incentives for further wealth accumulation, again leading to higher rates of growth (Birdsall, 2006). In contrast, many (political) economists have argued that high inequality has negative effects on growth, primarily through its detrimental impact on factors like institutional quality and social stability, which in turn are considered important preconditions for sustained economic growth (Acemoglu, Johnson & Robinson, 2004; Acemoglu & Robinson, 2010; Amendola, Easaw & Savoia, 2013; Banerjee & Iyer, 2005; Coatsworth, 2008; Easterly, 2007; Sokoloff & Engerman, 2000).

Moreover, high levels of inequality can be an indicator that the poor in society have difficulty in accessing assets such as land and education. This limits both the opportunities for the poor to move out of poverty (an inequality-poverty link) while also hampering overall growth and development (an inequality-growth link) (Abdullah, Doucouliagos & Manning, 2015; Bourguignon, 2004; Checchi, 2001; Ravallion, 2001).

In addition to this indirect link from poverty to (slower) growth via unequal access to opportunities, some empirical evidence shows that poverty directly hampers growth (Ravallion, 2012). The mechanism through which this happens is not well understood, however, and a recent study by Thorbecke and Ouyang (2018) did not find any empirical evidence to support this relationship in sub-Saharan Africa. One possible explanation could be the existence of poverty traps (Sachs et al., 2004). Here, individuals (or societies) are trapped in poverty because they cannot mobilise the energy and capital necessary to embark on a poverty-escaping growth path.

Finally, there remains the poverty-inequality link. As discussed above, in terms of economic mechanisms, inequality is primarily linked to poverty via its impact on the poverty-reducing effects of growth. In addition, there is a political mechanism that can affect poverty and inequality independent from growth: redistribution. Specifically, if redistribution takes place from the bottom to the top, inequality increases and poverty might increase, while redistribution from the top to the bottom can help alleviate poverty while at the same time reducing inequality. The extent to which redistribution takes place and the form it takes depends chiefly on the chosen development strategy and associated policies.

The empirical G-I-P relationship in sub-Saharan Africa is as contested as the theoretical discussions concerning the different links. In the case of Tanzania, this is reflected in the debates concerning three important post-independence periods under different development strategies. The first is the period of African socialism from 1967 to the early 1980s. Several authors argue that, despite initial growth, the long-term economic effects of this development strategy were dramatic as it was the main cause of an economic crisis in the late 1970s that halved real incomes in an already poor country (Bevan et al., 1988; Cooper, 2002, pp.179–180; Hyden & Karlstrom, 1993). Jerven (2011), in contrast, argues that the extent and impact of the crisis has been overstated and that the large observed declines in GDP are based on statistical artefacts. The debate also extends to questions of inequality. According to some researchers, African socialism led to a reduction in inequality to generally low levels (Bryceson, 2010; Sarris & van den Brink, 1993, p.3). Others find that inequality remained high, especially in rural areas (Collier, Radwan & Wangwe, 1990, pp.8–9; Ellis & Mdoe, 2003) or that inequality was even reinforced by the socialist regime (Sender & Smith, 1990, pp.1–2).

The second contested period is that of structural adjustment from 1986 to 1996. Again, some argue that, even though the overall growth performance was not very impressive, adjustment arrested the previous income decline

and led to poverty reduction, despite increases in inequality (Cooksey, 2011; Ellis & Mdoe, 2003; Ferreira, 1996). Others contend that poverty levels stagnated or even increased, driven, in part, by increases in inequality (Meertens, 2000; Sahn & Sarris, 1991; Sarris & van den Brink, 1993). Here, the Tanzanian case mirrors the broader debate on the impact of structural adjustment on sub-Saharan African countries. For a long time, the effects of structural adjustment were considered to be primarily negative (Arrighi, 2002; Hickel, 2017). Recent research, however, cast doubt on this dismal picture, pointing to long-term improvements in economic performance due to structural adjustment even if these positive effects came after some delay (Archibong, Coulibaly & Okonjo-Iweala, 2021; Cooksey, 2011; Easterly, 2019).

The third period is the "African miracle": decades-long sustained growth, which began in the mid-1990s and continues to this day.[2] As with the previous policy regimes, some see little positive impact of sustained growth on poverty rates, even though inequality levels remained stable (for example Atkinson & Lugo, 2010; Pauw & Thurlow, 2011). Based on what we know about the G-I-P interrelations, this creates a puzzle, as it should theoretically not be possible for growth to benefit only some parts of society (the non-poor) without increasing the level of inequality. A possible solution to this puzzle, discussed in more depth in Section 4, comes from recent studies concerning the assets of the poor. Ponte and Brockington (2020), for example, find that many rural people in Tanzania used the rising incomes from the latest growth episode to invest in land and education, instead of increasing consumption. Since poverty rates are usually measured using consumption estimates, this development was not captured well and could have led to an underestimation of the poverty-reducing effects of growth. This debate once more mirrors those concerning trends on the wider continent, which also sees growth pessimists (for example Dulani, Mattes & Logan, 2013) facing more optimistic evaluations of the growth-poverty link (for example Dollar, Kleineberg & Kraay, 2013).

The debate also highlights a general problem in the discussion of the G-I-P nexus that goes beyond the nature of different linkages or the quality of the data. Namely, it shows the difficulty of interpreting the quantitative evidence we find. This concerns not only the question of whether changes in consumption accurately reflect changes in income, but also issues around what level of inequality we might consider "high" (Milanovic, 2013) or when to consider growth "pro-poor" (Thorbecke & Ouyang, 2018). To put income inequality estimates into perspective and to gauge the impact of economic growth on poverty reduction we employ the IER, which will be discussed in depth at the end of the next section. Using the IER, we gain a better understanding of what the observed level of income inequality means and evaluate whether growth during a specific period was pro-poor, or not.

Overall, the theoretical and empirical debates outlined in this section highlight the need to consider the question of growth, inequality, and poverty (reduction) jointly to find the narratives that reflect the actual developments most accurately.

3. Trends in Growth, Inequality, and Poverty

The first step in our analysis is to collect and evaluate the different available relevant data series in post-independence Tanzania. A major challenge is that the different narratives concerning developments in Tanzania are not simply rooted in different interpretations of the existing data, but that many different and sometimes contradictory data series exist. In this section, we will first assess the reliability of existing growth series, Gini coefficients, and poverty estimates, and present the series which we believe to offer the most convincing estimates. Then, we present our new estimates for the inequality extraction ratio for post-independence Tanzania as a complementary indicator to analyse the G-I-P triangle.

---

[2] Or at least until the beginning of the coronavirus pandemic in the spring of 2020.

3.1. GDP

There are two main databases providing long-term data on GDP levels and growth that cover the entire post-independence period in Tanzania: the Maddison Project Database and the Penn World Tables (PWT). The World Bank also provides growth, inequality, and poverty statistics in its World Development Indicators (WDI) database, though these series only begin in the 1980s, and in the case of Tanzania, are only available from the 1990s. The Tanzanian National Bureau of Statistics has also published national accounts based on several benchmark years (see Jerven (2014) for a discussion). Lastly, Atkinson (2015b) provides additional national income estimates for the late colonial period and roughly the first decade of independence. These series are collectively illustrated in two figures below. Figure 2 shows the series of real GDP per capita from 1960 to 2017 in $2011, as provided by Maddison, the PWT, and the World Bank. Figure 3 shows the annual growth rate in GDP underlying the trends in the previous figure and the growth rate for Atkinson's control total. Looking at these two figures, a range of serious issues becomes apparent. Specifically, both the levels of GDP per capita as well as the annual GDP growth rates vary widely.

The trends in GDP are, broadly speaking, the same across all series – a growth period beginning after independence and lasting until the mid- to late-1970s, followed by decline in GDP until the mid- to late-1980s, with a further drop towards the 1990s. From the 1990s we see a second growth era (ongoing), but the magnitudes of these changes differ significantly between the various datasets. Both the PWT series and the Maddison (multiple benchmarks) series report much stronger growth and an extreme, and volatile, decline of GDP per capita between 1979 and 1994. These series offer support to both the more outspoken critics of *ujamaa*, who argue that incomes fell by around half after the collapse of the socialist experiment (Bevan et al., 1988; Hyden & Karlstrom, 1993), as well as the critics of structural adjustment (Bryceson, 2010; Putterman, 1995). Interestingly, these two groups do not necessarily have a lot of supporter overlap, as the *ujamaa* critics tend to be more optimistic in their assessment of the subsequent period of structural adjustment, and vice versa.
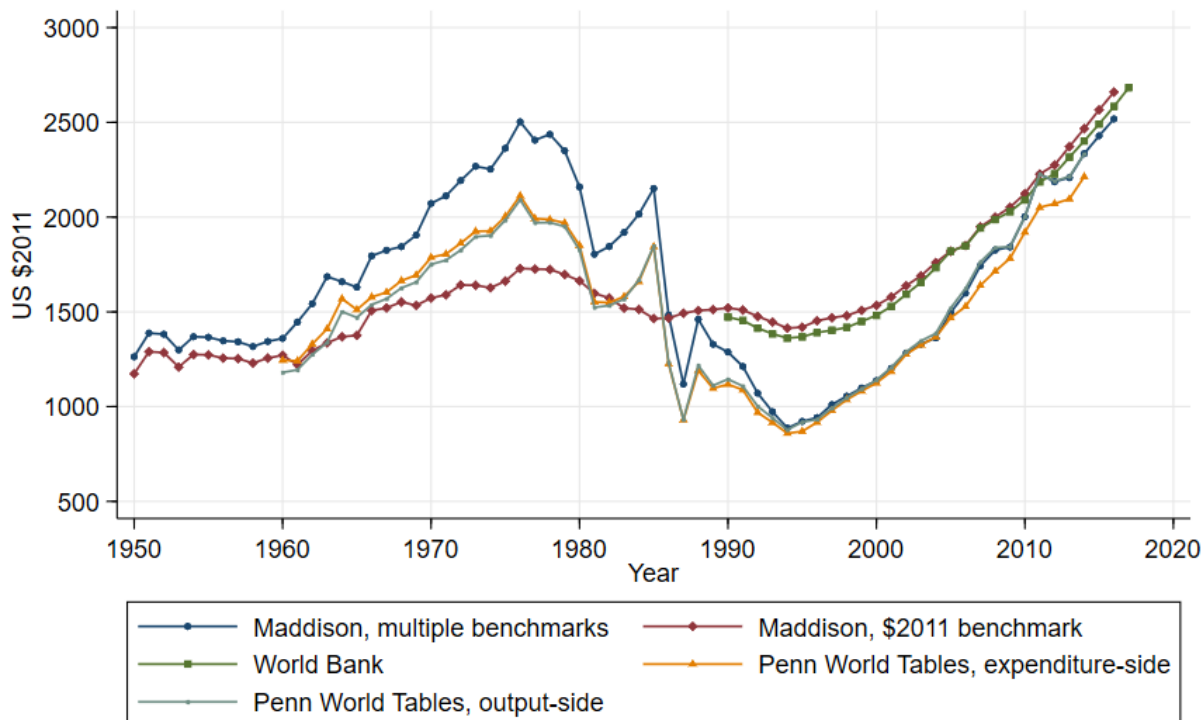

Figure 2: Real GDP per capita, $2011.
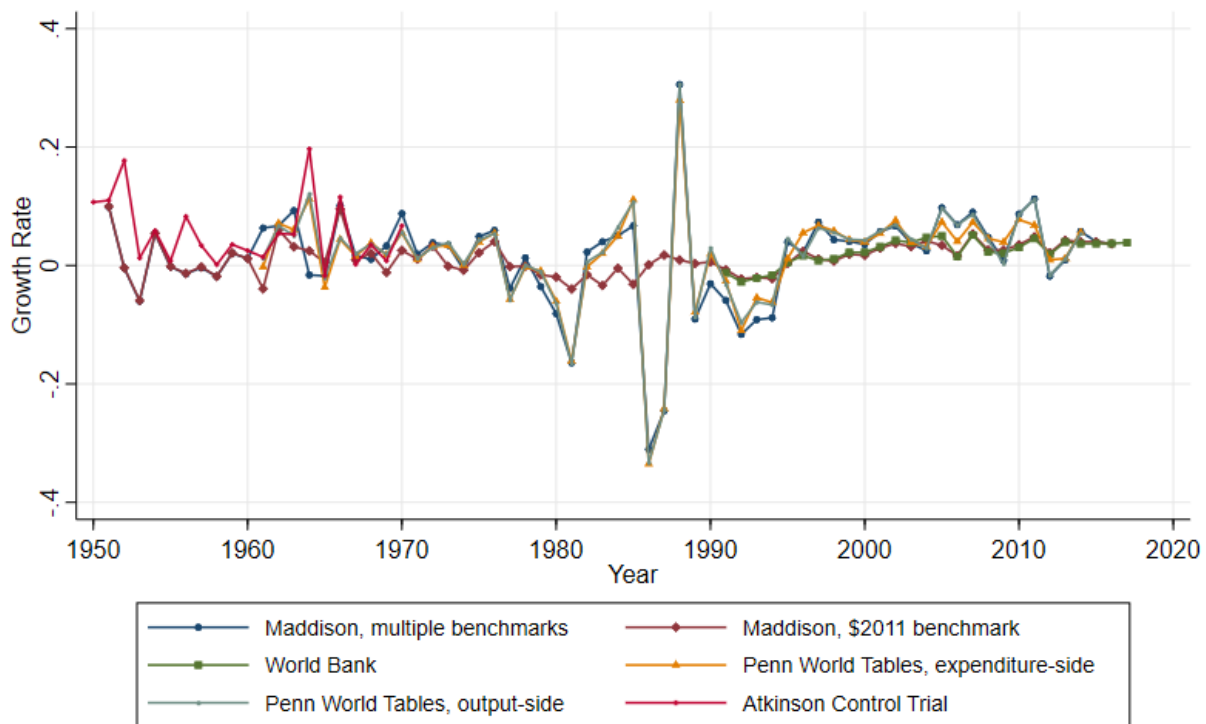Sources: Maddison, PWT, WDI.

Figure3: GDP growth.
Sources: Authors' calculations based on Atkinson (2015b), Maddison, PWT, WDI.

Jerven (2014) provides an extensive discussion of the different growth series, the causes for their disagreement, and the level of accuracy with which they represent actual growth trends and levels of income. We have extended Jerven's (2014) original correlation matrix, found in Table 1, which shows that the Maddison ($2011 benchmark) series correlates most closely with the different GDP growth series available, including those from the original national accounts and Atkinson's (2015b) estimates. Crucially, this series avoids the extreme swings in GDP per capita levels and GDP growth rates found in the other three series. As Jerven's (2011, 2014) previous analysis has shown, these swings do not actually measure real economic downturns and upturns, but are the result of adjustments to the national accounting method at the time. The difference in methods underlying the two different Maddison series is explained in detail in Bolt et al. (2018). The aim of the new benchmark series was to introduce multiple benchmark years based on results from the International Comparison Program (ICP) (Feenstra, Inklaar & Timmer, 2015). Due to a lack of historical ICP data on African countries, however, they had to resort to indirect estimation methods and used real wage data instead of prices. As a result, the newer Maddison (multiple benchmarks) series departs more strongly from the official national account data.

To avoid analysing economic trends that are simply results of extrapolation with indirect data we select the long-run series that most closely relates to the official economic data. Thus, we proceed to use the Maddison ($2011) series for the basis of the triangulation of trends in poverty and inequality. Having consulted all the available material on economic growth we conclude with a picture of stable growth from the 1950s until 1975 with a doubling of GDP per capita in the period. Our analysis of the lost decades (Easterly, 2001), that is, the years from the late 1970s into the mid-1990s, is a picture of stagnation, rather than the radical decline suggested by some available GDP series (Figure 3). The poverty data discussed in Section 3.3 and Jerven's (2014) investigation of the primary data and methods used to derive growth estimates for this period lend support to such analysis.

Table 1: Correlation matrix between GDP growth rates of all available national income series.[3]
Sources: Atkinson (2015b), Jerven (2014), Maddison, PWT, WDI

	Maddison (multipe)	Maddison ($2011)	WDI	PWT (Exp.)	PWT (Output)	TZA 1966	TZA 1976	TZA 1985	TZA 1992	Atkin-son
Maddison (multipe)	1.00	0.43	0.81	0.94	0.96	0.50	-0.24	0.15	0.54	0.14
Maddison ($2011)	0.43	1.00	0.97	0.36	0.35	0.83	0.59	0.74	0.85	0.40
WDI	0.81	0.97	1.00	0.82	0.80	…	0.94	0.55	0.82	…
PWT (Exp.)	0.95	0.36	0.82	1.00	0.99	0.44	-0.23	0.14	0.58	0.85
PWT (Output)	0.96	0.35	0.80	0.99	1.00	0.42	-0.22	0.24	0.61	0.91
TZA 1966	0.50	0.83	…	0.44	0.42	1.00	0.70	0.78	…	0.87
TZA 1976	-0.24	0.58	0.94	-0.23	-0.22	0.70	1.00	0.40	0.57	…
TZA 1985	0.15	0.74	0.55	0.14	0.14	0.78	0.40	1.00	0.77	0.88
TZA 1992	0.54	0.85	0.82	0.58	0.61	…	0.57	0.77	1.00	…
Atkinson	0.14	0.40	…	0.85	0.91	0.87	…	0.88	…	1.00

3.2. Inequality

In comparison to GDP estimates, estimates of income inequality tend to be less comprehensive in coverage, with frequency depending on the indicator being used.[4] There has been some debate as to which indicator captures income inequality best: the Gini coefficient or other indices such as the Theil index or top income shares. The Gini coefficient has traditionally been the most widely employed indicator, although more recently, top income shares have gained in popularity, the latter being promoted, for example, by Piketty's World Inequality Project (Alvaredo et al., 2017, 2018). For this study, we have decided to follow the traditional approach and primarily use the Gini coefficient. Gini coefficients have been found to be as reliable as top income shares or the measures based upon them (Galbraith, 2019b). Moreover, (consumption-based) Gini coefficients have been argued to capture well-being in poor and predominantly agricultural societies better than (top) income measures (Clementi, Fabiani & Molini, 2019; Fisher, Johnson & Smeeding, 2015). On a more practical note, focusing on the Gini coefficient instead of top income shares allows us to build a longer time series of inequality estimates. Income tax data, the basis for the calculation of top income shares, has not been published for Tanzania since 1970 (Atkinson, 2011), which complicates the estimation and analysis of top income shares significantly. Finally, using the Gini coefficient also allows us to expand the discussion of inequality by introducing the related inequality extraction ratio below.

For Tanzania, the coverage of traditional, mostly survey-based Gini coefficients is relatively good compared to other sub-Saharan African countries. There are observations for six years, and at least one observation for each post-independence decade before the World Bank's more frequent and systematic Gini estimates, published through PovcalNet, begin in 1991. We have used the different sources available to collate three series of Gini coefficients. The first series consists of income-based Gini coefficients, whereas the second is consumption-based. Differentiating between the two measures is important, as previous research has shown significant differences between income- and consumption-based measures. Usually, income-based Gini coefficients are higher than consumption-based ones and are more prone to accidentally capture seasonal income fluctuations in predominantly

---

[3] While the World Bank WDI series has an even better fit than the Maddison ($2011) series, it unfortunately does not cover the entire period under investigation.

[4] Gini coefficents, commonly calculated based on survey data, depend on the frequency with which household and other income surveys were conducted, while tax-based indicators such as top income shares can be calculated with higher frequency if tax data is available.

agricultural societies (Clementi, Fabiani & Molini, 2019; Deaton & Grosh, 2000; Deininger & Squire, 1996; Smeeding & Latner, 2015). For the period before 1991, we have used Gini coefficients from a wide range of sources which have been collected in the UNU WIDER World Income Inequality Database (WIID) and Milanovic's All the Ginis database (Giniall).[5] Table 2 provides an overview of the available Gini estimates for the pre-1991 period. It also provides recent inequality estimates based on the National Panel Survey and a series of Household Budget Surveys, both conducted by Tanzania's National Bureau of Statistics.

As the table shows, the estimates for Gini coefficients for a given year can vary widely. Ideally, to assess the different estimates, one would systematically re-calculate them using the raw data and a consistent methodology. Unfortunately, the raw data for the pre-1991 period is not accessible, in lieu of which, we use the original sources for the Gini coefficients provided by the two databases to select the most consistent estimates.

All pre-1993 Gini coefficients, except for the two estimates for 1964, are based on different household budget surveys. The 1964 coefficients from Cromwell (1977) and Paukert (1973) are based on aggregated distribution data from Adelman and Morris (1971, 1972), who in turn used estimates made by Priyatosh (1968). As Paukert (1973) explains and as is evident in Priyatosh's (1968) work, the incomes at the lower end of the distribution were only rough estimates and assumed to be equally distributed. This leads Cromwell (1977) to underestimate the Gini coefficient. Paukert (1973), in contrast, modifies Priyatosh's (1968) estimates by using the now common assumption of a lognormal distribution of income at the lower end and a Pareto distribution at the top of the income distribution. This leads him to arrive at a higher and, in our opinion, more reliable estimate.[6]

The two 1969 income-based estimates appear unreliable. Jain's (1975) coefficient likely overestimates while van Ginneken and Park's (1984) underestimates the true level of inequality, since no qualitative evidence supports the major shift in income distribution implied by an increase or decrease of the Gini coefficient by almost 10 points within one or two years. We thus omit both estimates.

Of Ferreira's (1996) estimates for 1983 and 1991, the 1991 Gini appears excessively high, both in comparison to the 1983 coefficient and especially to the later PovcalNet estimates. Ferreira (1996) herself remarks on the substantial increase of the Gini coefficient, but argues that this was a natural consequence of the growth experienced during the period (consistent with the Kuznets hypothesis). We disagree with this assessment. First, the Maddison ($2011) estimates show that GDP growth during the period was comparatively slow. Second, the trend in the consumption-based Gini coefficient does not indicate a major structural shift. Taken together, these circumstances make it unlikely that Kuznets dynamics were at play. Given the large discrepancy between Ferreira's 1991 income-based Gini and all other available Gini estimates for the early 1990s, it is likely that the observed increase is rooted in the nature of the underlying survey data (the 1991 Cornell Household survey). Consequently, we omit the 1991 Gini coefficient from our series.

In terms of consumption-based Gini coefficients, we omit the 1991 estimate by Chen et al. (1993), and instead used the estimate provided by the World Bank, which is also the source of the remainder of the estimates for consumption-based Gini coefficients used. For the period from 2007 to 2013, Belghith et al. (2018) offer several alternative Gini coefficients based on three household budget surveys as well as the latest National Panel Survey, both conducted by the Tanzanian National Bureau of Statistics. Here, it is interesting to note that the trend in income inequality during the survey period differs, even though both surveys were conducted around the same time and using the same underlying units of analysis. Specifically, the National Panel Survey shows a slightly lower level of starting inequality, but a rising trend, whereas the household budget surveys show a decline in inequality. Belghith et al. (2018) have attempted, unsuccessfully, to harmonise both series.

---

[5] For a useful overview of the overall problems of aggregating Gini estimates and an evaluation of the different databases, see Smeeding and Latner (2015).

[6] Paukert (1973) also provides an overall assessment of the quality of the underlying data for different countries and concludes that the data for Tanzania is reasonably reliable.

Table 2: Gini coefficient for Tanzania, 1964-1991, excluding PovcalNet.
Sources: Belghith et al. (2018), Giniall, Tabatabai (1996), WIID.

Year	Gini	Measure	UoA	Source A	Source B	Raw Data
1964	41.2	Y	I	WIID	Cromwell (1977)	Adelman & Morris (1971, 1972), Priyatosh (1968)
1964	54	Y	I	WIID	Paukert (1973)	Adelman & Morris (1971, 1972), Priyatosh (1968)
1967	52.8	Y	I	WIID	Jain (1975)	Annual Economic Survey
1968	50.8	Y	I	WIID	Lecaillon et al. (1984)	Annual Economic Survey
1969	59.7	Y	HH	WIID	Jain (1975)	HBS
1969	42	Y	HH	WIID	van Ginneken & Park (1984)	HBS
1969	39	C	I	Giniall	Deininger & Squire (1996)	
1977	52	Y	HH	WIID	Lecaillon et al. (1984)	National Accounts
1977	44	C	I	Giniall	Deininger & Squire (1996)	
1983	52	Y	I	WIID	Ferreira (1996)	HBS
1991	72	Y	I	WIID	Ferreira (1996)	Cornell Household Survey
1991	59.01	C	I	Tabatabai (1996)	Chen et al. (1993)	
2007	38.5	C	I	Belghith et al. (2018)		HBS 2007
2009	38.1	C	I	Belghith et al. (2018)		NPS 2008/09
2011	38.4	C	I	Belghith et al. (2018)		NPS 2010/11
2012	35.8	C	I	Belghith et al. (2018)		HBS 2011/12
2013	40.6	C	I	Belghith et al. (2018)		NPS 2012/13

Notes: For the measure, Y denotes income and C denotes consumption. For the unit of analysis (UoA), I denotes individual and HH denotes household. Source A lists the main database or compilation that published the Gini coefficient. Source B represents the primary source of the Gini estimate, if available. The Raw Data columns lists the primary source underlying the Gini estimates by either Source A or Source B, if available.

This discrepancy raises an important issue. While much has been said about the differences in Gini estimates depending on whether consumption or income is used as the unit of measurement, less has been said about the impact of survey design on measured inequality. Beegle et al. (2012) test this impact by conducting a range of differently designed household budget surveys in Tanzania. They conclude that, depending on the design of the survey, the differences in measured inequality can be as large in magnitude as the differences between income- and consumption-based Gini coefficients – a finding that seems to be confirmed by the diverging results discussed by Belghith et al. (2018).

To verify our data selection process and fill any remaining gaps, we employ a third series of Gini coefficients: estimates of gross income inequality provided by the Estimated Household Income Inequality dataset (EHII) (Galbraith et al., 2014, 2016). This dataset uses administrative payroll records to estimate Gini coefficients. It has the advantage of providing a longer time series of consistently estimated Gini coefficients. Reliability checks of this series by its creators indicate that it is congruent with the results of other estimates of gross income inequality based on available surveys (Galbraith, 2019a; Galbraith et al., 2014, 2016).

We have charted the three series below in Figure 4.[7] From a long-term perspective, the picture that emerges is one of relatively stable inequality: in the 2010s, the level of income inequality, estimated via gross income or consumption, was roughly the same as in the 1960s. The gross income-based Gini estimate was 49.8 in 1965 and 51.5 in 2013. In 1969, the consumption-based Gini coefficient was 39.0 and in 2017 it was 39.5. To put these estimates into perspective, Odusola et al. (2017) consider a consumption-based Gini coefficient below 40 to be "very low" and one between 40 and 45 "low" for sub-Saharan African countries.

Regarding changes over the entire period, the different Gini estimates provide ambivalent evidence. To add additional data points, especially for the 1960s and the 2010s, we can draw upon evidence from income shares, which provide an alternative measure of inequality. These shares, illustrated in Figure 5, show a clear decrease in income inequality in the early post-independence period, which continues throughout the *ujamaa* period. The top income share trends, both for the 0.1 percent and the top quintile, run counter to the Gini estimates, which are stagnant in the late 1960s and the early 1970s, although gross income inequality does see a decrease in the latter part of the 1970s. The evidence from top income shares indicates that the Nyerere government achieved one of its main policy goals, curtailing high levels of income inequality. Interestingly, the concern voiced over rising inequality in the years before the Arusha declaration in 1967, which sparked the government's preoccupation with inequality in the first place (Bank of Tanzania, 1983, pp.36–37; Nyerere, 1977), does not play out in these data. The quintile shares in Figure 5 also show that the Tanzanian middle class in the fourth quintile benefited most from the pre-Arusha growth period until 1967 and extended its gains throughout the period of African socialism until the full implementation of structural adjustment programmes in the late 1980s and early 1990s.

The structural adjustment period shows a reversal of these trends. Both the decline of income inequality as measured by the Gini coefficient (Figure 4) and of top income shares (Figure 5) came to a halt. After a brief period of stagnation, the turn of the millennium saw a slow but steady increase in inequality. This trend in inequality during and after structural adjustment was not unique to Tanzania, and has been observed across sub-Saharan Africa (Ferreira, 1996; Forster et al., 2017; Sahn & Sarris, 1991; Sarris & van den Brink, 1993, pp.56–57). Still, when compared to inequality levels across the continent, income inequality in Tanzania remained low (Odusola et al., 2017).

---

[7] The figure also lends credence to Galbraith et al.'s (2014, 2016) assessment that their estimates are reliable. As can be seen, the trend of gross income inequality closely follows the trend of the World Bank's consumption-based estimates, albeit at an expectedly much higher level.
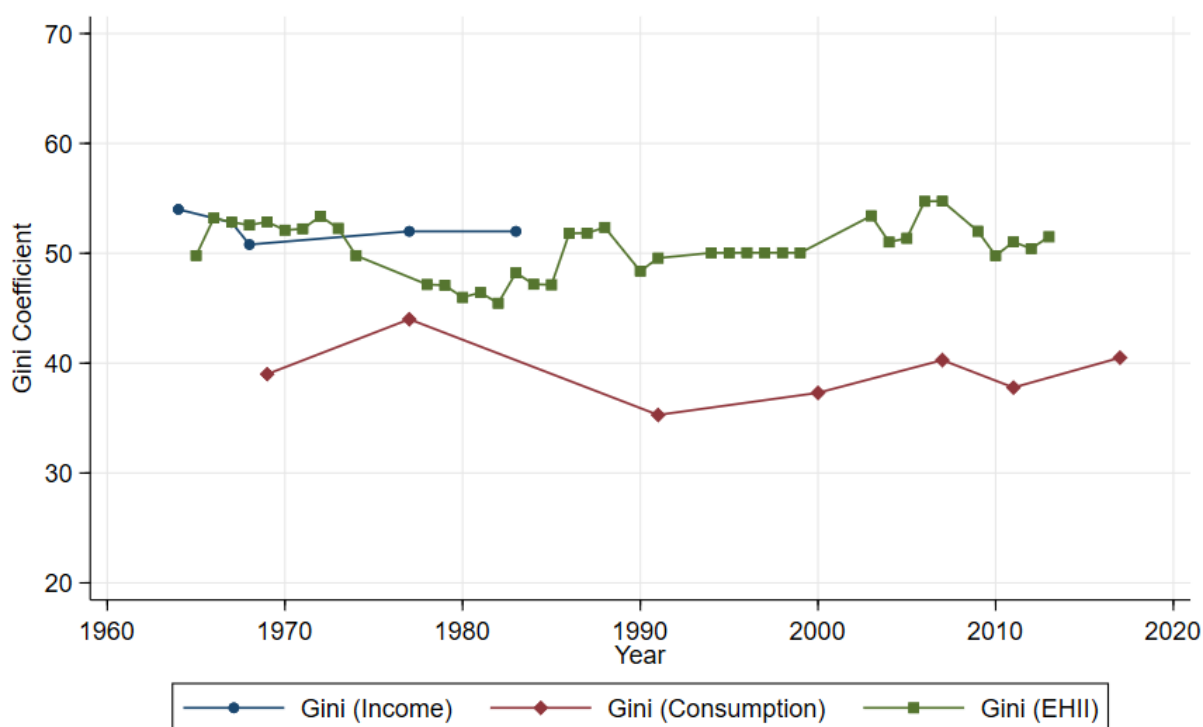
Figure 4: Gini coefficients, 1964-2017.
Sources: Belghith et al. (2018), EHII, Giniall, Tabatabai (1996), WIID.
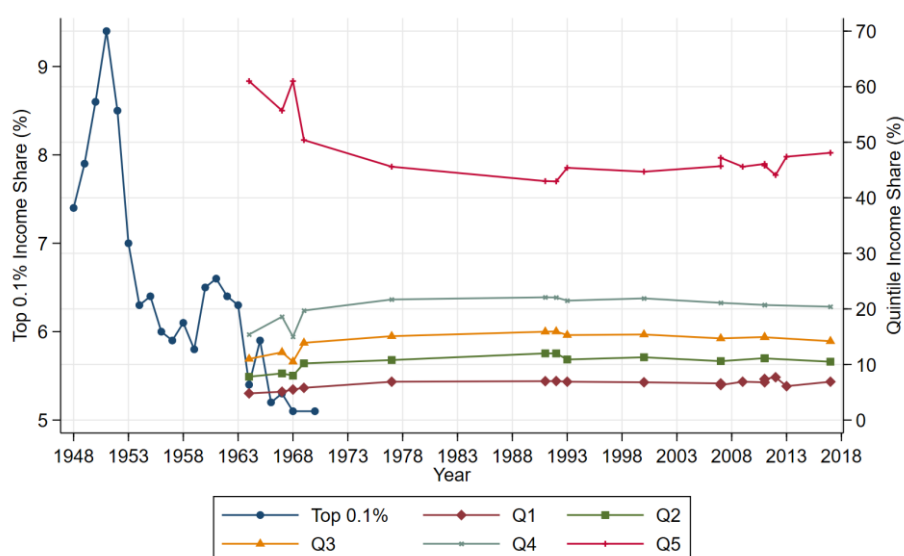

Figure 5: Income shares, 1948-2017.
Sources: Atkinson (2015b), Belgith et al. (2018), Jain (1975), Lecaillon et al. (1984), Paukert (1973).

3.3. Poverty

Of the three indicators in the G-I-P triangle, the data on poverty are the poorest. Consistent estimates of the poverty headcount ratio in constant international dollars, provided by the World Bank and based on household budget surveys, are only available from the 1990s onwards, covering the years 1991, 2000, 2007, 2011, and 2017. In addition to the World Bank estimates, there are four estimates of rural poverty for 1978, 1980, 1983, and 1991 (Bank of Tanzania, 1983; Ferreira, 1996; Tabatabai, 1996), and two additional estimates at the national poverty

line, for 1980 and 1991 (Tabatabai, 1996). All are illustrated in Figure 6. For the period from 2009 to 2013, the National Panel Survey (NPS) provides three additional estimates of the poverty headcount ratio (Belghith et al., 2018).
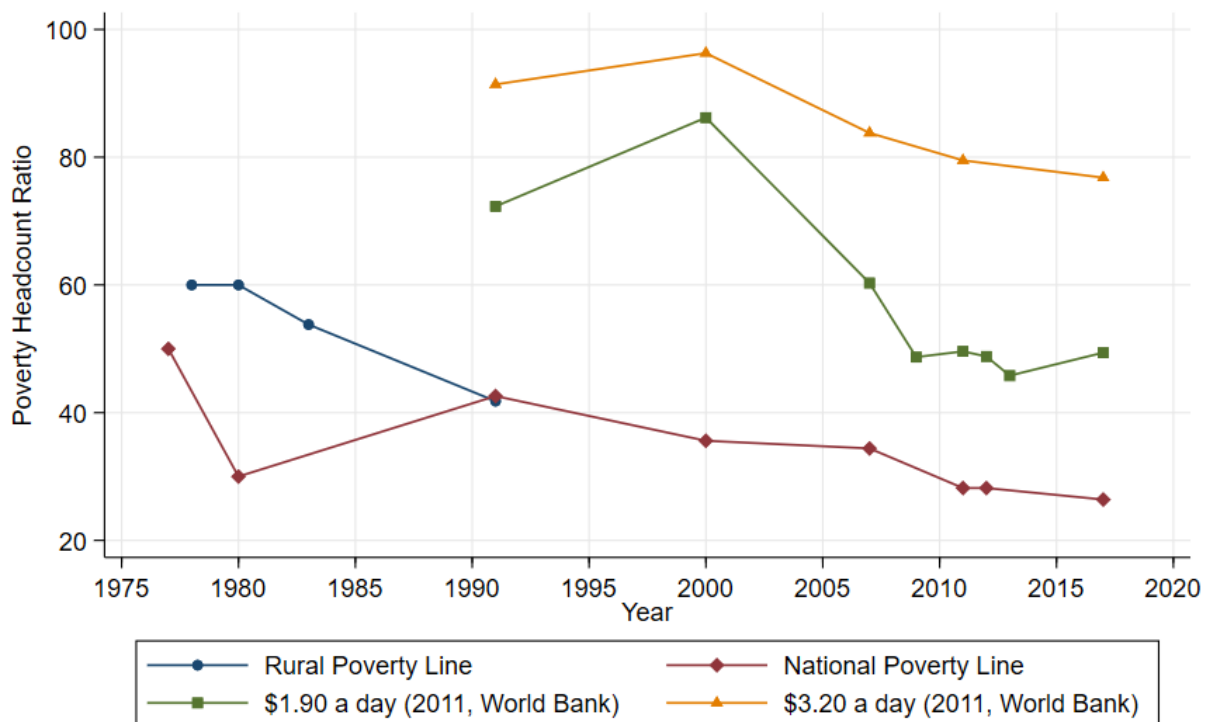

Figure 6: Poverty headcount ratios, 1977-2017.
Sources: Bank of Tanzania (1983), Belgith et al. (2018), Ferreira (1996), Sarris and van den Brink (1993), Tabatabai (1996), WDI.

From 1990 to 2017, the overall trend in poverty shows a clear improvement in headcount ratios at both $1.90 and $3.20 a day, as well as using the national poverty line. The main difference between the standardised World Bank estimates and the trend at the national poverty line lies in the question of whether there was a continuous downward trend in poverty levels from the early 1990s onwards, or whether poverty rose until the turn of the millennium, only to decline sharply thereafter. Similarly, it is not clear whether the poverty headcount ratio over the last decade has remained relatively constant or continued to fall – the $1.90 line shows a slight rise, while the national poverty line shows a slight decline.

Like the $1.90 line, the poverty line employed in the evaluation of the National Panel Survey from 2009 to 2013 also shows a rising trend. These data, however, should be interpreted with caution, as they exemplify the challenges of consistently estimating the incidence of poverty. As Belghith et al. (2018) show, the difference between the levels and trends of the NPS and the household budget surveys conducted during the same period (the latter of which form the basis of the World Bank estimates) are primarily due to the choice of poverty line, deflators, etc., and can be all but eliminated when the underlying data is used to compute estimates on a consistent basis (in their case, the standardised $1.90 a day poverty line).

Ideally, one would follow the same approach to harmonise the data provided by sources other than the World Bank. Yet, as has been noted above, the inaccessibility of the original survey data underlying these estimates means that it has not been possible to replicate this approach, or to create additional data points for the period before 1978. This is unfortunate, as these missing years cover both the contested *ujamaa* and early structural adjustment periods. Specifically, these missing years are: 1969 and 1977, for which the Tanzanian National Bureau of Statistics conducted two nation-wide household surveys; 1980, for which the University of Dar es Salaam and International Labour Organisation conducted a partial survey, and 1983-84, for which Bevan et al. (1988) conducted rural and

urban surveys. While these surveys and a range of estimates derived from them are discussed in several publications, the available secondary data does not allow for a re-estimation of poverty rates.

To deal with the lack of quantitative data, and to check the accuracy of the data provided, we supplement the above poverty estimates with a range of secondary sources analysing the developments throughout the data-scarce periods. Combining these with the existing poverty estimates provides us with a clearer picture of the long-term trend. As with the growth trend, the picture of poverty in the first two and a half decades after independence is one of overall stagnation. In 1960, the majority of Tanzanians lived in poverty (Ferreira, 1996; Paukert, 1973). Strong growth in the 1960s and 1970s lead to improvements. Despite these improvements, and even before several crises coalesced in the late 1970s and initiated the decline in GDP discussed above, the majority of people continued to live in poverty, as indicated by the 1977 estimate at the national poverty line, and as was even acknowledged by Nyerere (1977). The crises all but reversed the decline in poverty rates (which would indicate that the 1980 national poverty line estimate is inaccurate) (Bevan et al., 1988; Bryceson, 2010; Coulson, 2013, p.240). The period of structural adjustment, beginning in 1986, did not alleviate the situation and might have exacerbated it, as seen in the World Bank series in Figure 6. From 2000, a strong downward trend in the absolute poverty headcount ratio can be observed, although it lasted less than a decade. Since 2009, poverty headcount ratios have stagnated, and around half of Tanzanians still live below the international poverty line of $1.90 a day.[8]

3.4. The Inequality Extraction Ratio

Having established a reliable series of inequality estimates, we can now use the IER to contextualise the Gini coefficients. To reiterate, the IER denotes the ratio between the observed Gini coefficient and the maximum feasible Gini coefficient as given by the inequality possibilities frontier (IPF) for any given year. If the IER increases, incomes in society become more concentrated in the hands of fewer people. Conversely, if it decreases, incomes become more evenly spread.

The maximum feasible Gini coefficient as provided by the IPF represents the maximum level of income inequality within a society that is compatible with long-term societal survival. In other words, it denotes the maximum level of inequality in a society at which all individuals, except for a small elite, live at the level of the subsistence minimum (Milanovic, Lindert & Williamson, 2011). The IPF is represented by the maximum Gini coefficient, G^*. The potential maximum Gini coefficient depends on the mean income of a society – the lower the mean income, the lower the maximum feasible Gini. Conversely, economic growth – an increase in mean incomes – pushes the IPF outwards and allows for higher levels of income inequality in society. This has two important implications.

First, in poorer societies with lower mean incomes, a low Gini coefficient as measured on a fixed scale could still be as high as it could possibly be. To give one example from colonial history: in Kenya in 1927, the Gini coefficient was 46.2 (Milanovic, Lindert & Williamson, 2011), which in the classification scheme of Odusola et al. (2017) indicates a "medium" Gini. Due to very low mean incomes, the IER, on the other hand, was 100 percent. If the IER approaches 100 percent, then all available surplus beyond what is necessary for the survival of the population produced in an economy is concentrated amongst a small elite group, while the rest of the population lives at the physical subsistence (or social) minimum.[9] If the IER exceeds 100 percent, then at least some members of society have an income below the physical subsistence (or social) minimum. This means that in Kenya, most surplus income above subsistence produced was concentrated in the hands of a small elite, primarily the colonial powers (Milanovic, 2013). Second, even if economic growth leads to an increase in income inequality, actual income concentration as measured by the IER could still decline, as growth pushes the IPF outwards.

---

[8] The lower estimate given by the national poverty line has been shown to be due to differences in the price deflators used and differences in the estimation of the poverty line (Belghith et al., 2018).

[9] Milanovic himself interprets an IER of 100 percent by stating that, in such cases, all income beyond the subsistence minimum is literally extracted, that is, redistributed from the bottom to the top (Milanovic, 2009, 2013, 2018). However, this terminology implies a causal relationship that is not necessarily established *a priori*. If we consider, for example, a society of two individuals, one producing at subsistence and one producing above subsistence, with no economic interaction taking place between the two, the extraction ratio would be 100 percent even though no actual redistribution of income between the individuals is taking place.

Milanovic (2013) presents two versions of the IPF. The first is the physical minimum IPF. It is based on the physical subsistence minimum, meaning the minimum income necessary for any individual to assure their survival. The formula for the physical minimum IPF, i.e. the maximum feasible Gini G^*, is presented in Equation 1 (for a formal deduction of this equation, see Milanovic, Lindert & Williamson, 2011):

$$G^*(\mu) = \frac{\alpha - 1}{\alpha} \qquad (1)$$

where μ denotes mean income (GDP per capita) and α denotes the average income of a community in terms of subsistence s, with $\alpha = \mu/s$. As can be seen from the equation, the lower the mean income, the lower the maximum feasible Gini; conversely, as income grows, so does the potential for income inequality.

Besides the physical subsistence minimum, any society also has a social minimum income below which individuals are considered poor (Chen & Ravallion, 2013; Ravallion, 2012b). This social minimum tends to increase with increasing average incomes. To capture this effect, a social minimum IPF can be estimated. Here, the average income in terms of subsistence α is dynamically increased by a factor b, which we have set at 0.4. This is at the lower end of the empirically determined values found in the literature, accounting for the fact that, overall, Tanzania continues to be one of the poorest countries in the world.[10] The social minimum IPF is presented in Equation 2:

$$G^*(b, \alpha) = \left(1 - \frac{1}{\alpha}\right)\left(\alpha^b\right) \qquad (2)$$

The inequality extraction ratio, then, is simply the ratio of the observed level of income inequality (measured by the Gini coefficient) and the maximum feasible level of income inequality (the physical or social minimum IPF G^*) for any given year. It is presented in Equation 3:

$$IER = \frac{G}{G^*} \qquad (3)$$

To calculate the physical and social minimum IPFs for Tanzania, we have used the Maddison ($2011) GDP per capita series for mean income (μ) and the World Bank's international poverty line of $1.90 a day to represent the physical subsistence minimum (s). As discussed, for the social minimum IPF, this physical subsistence minimum has been dynamically increased using a factor b of 0.4.

We then use these two IPFs to calculate the IERs using the Gini coefficients from the three series discussed in the previous section and illustrated in Figure 4. Figure 7 shows the IERs for the income-based, consumption-based, and gross-income-based Gini coefficients using the physical minimum IPF, and Figure 8 shows the IERs for the same Gini coefficients using the social minimum IPF.

If the IER for the physical subsistence minimum is higher than 100 percent, this means – assuming there are no measurement errors – that the incomes of some members of society were (temporarily) pushed below the subsistence minimum. As Figure 7 shows, this was the case for the income-based physical minimum IER in 1964 and 1969. Here, the likely cause of the result are measurement errors, since the underlying Gini coefficient is based on a rough disaggregation of national income statistics. Still, even the extraction ratios based on the EHII gross income Ginis approached 100 percent in several periods– in the first decade of independence, during the beginning of structural adjustment in the second half of the 1980s, and again in the mid- to late 1990s.

---

[10] As the literature shows, the richer a country, the higher b tends to be. For a review, see Milanovic (2013).
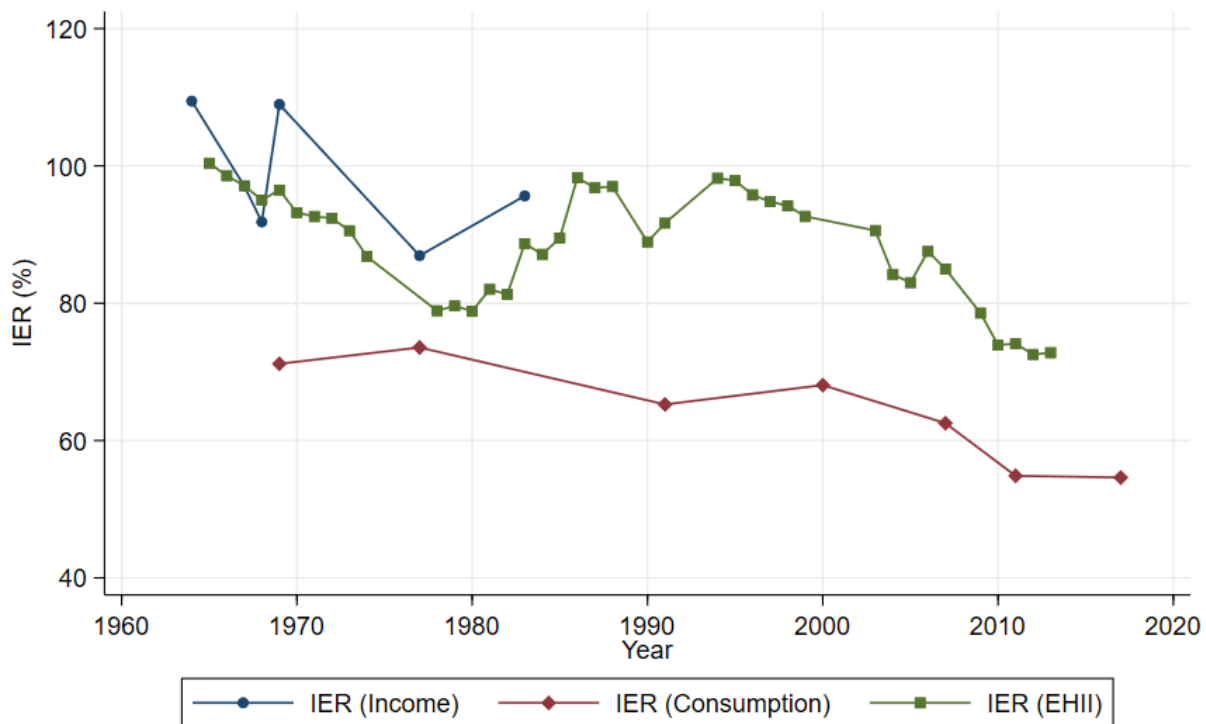
Figure 7: Inequality extraction ratios for the physical minimum IPF, 1964-2017.
Source: Authors' calculations.

Some important observations can be made regarding the IERs in Figure 7. First, while inequality in Tanzania since independence appears comparatively low, in many years it could also not have been much higher, especially during the late 1960s and during the period of structural adjustment from 1986-1996. In the periods, the (gross-income) IER approaches 100 percent, so that the comparatively low Gini coefficients are indicative of the overall very low mean incomes, rather than a sign of an equal distribution of incomes. Using the IER instead of simple income inequality measures like the Gini coefficient and top income shares, we see that the concerns over high inequality voiced by the Nyerere government in the early years of independence were well founded, after all. Likewise, the IER highlights that increases in income inequality were indeed significant during the years of structural adjustment.

In both periods, the surplus income above subsistence and the gains from growth were concentrated amongst a small section of the population, including richer farmers and the bureaucracy. It is important to note, however, that this was not primarily due to these groups *extracting* the existing surplus above subsistence from the poorer peasants. Instead, the output produced by most of the predominantly rural population was at or slightly above subsistence level, while a small group of medium- and large-scale farmers produced most of the surplus and was responsible for much of the observed economic growth (Cooksey, 2011; Coulson, 2013, pp.201–205; Meertens, 2000; Putterman, 1995).

Second, redistribution of the existing surplus in society played an important role throughout Tanzania's post-independence history. The consumption-based IER, based on the Gini series that reflects household net incomes most closely, was consistently lower than the gross-income-based IER, which means that actual incomes above physical subsistence were not as highly concentrated. Third, the consumption-based IER does show a steady decline from 1969 to 2017, and that decline accelerated after 2000. This lends further support to our assertion that growth since the turn of the millennium has been pro-poor, as the increase in mean incomes outpaced the increase in inequality, resulting in lower levels of income concentration.

Despite these positive trends, the social minimum IER in Figure 8 shows that Tanzania still has a long way to go in terms of increasing living standards for the population. The consumption-based IER hovers around 100 percent until the year 2000, while the gross income-based IER is consistently above 100 percent, only falling to this

threshold from 2010 onwards. In other words, given the prevailing level of income inequality, mean incomes in Tanzania were too low to allow the average Tanzanian to live above the social minimum income threshold, and for most of the post-independence period, the average Tanzanian has been living close to the physical subsistence minimum. This situation only began to change in the last two decades, when strong and continuous growth generated enough income to allow increasing numbers of Tanzanians to improve their economic position instead of living on the margins of the physical subsistence threshold.
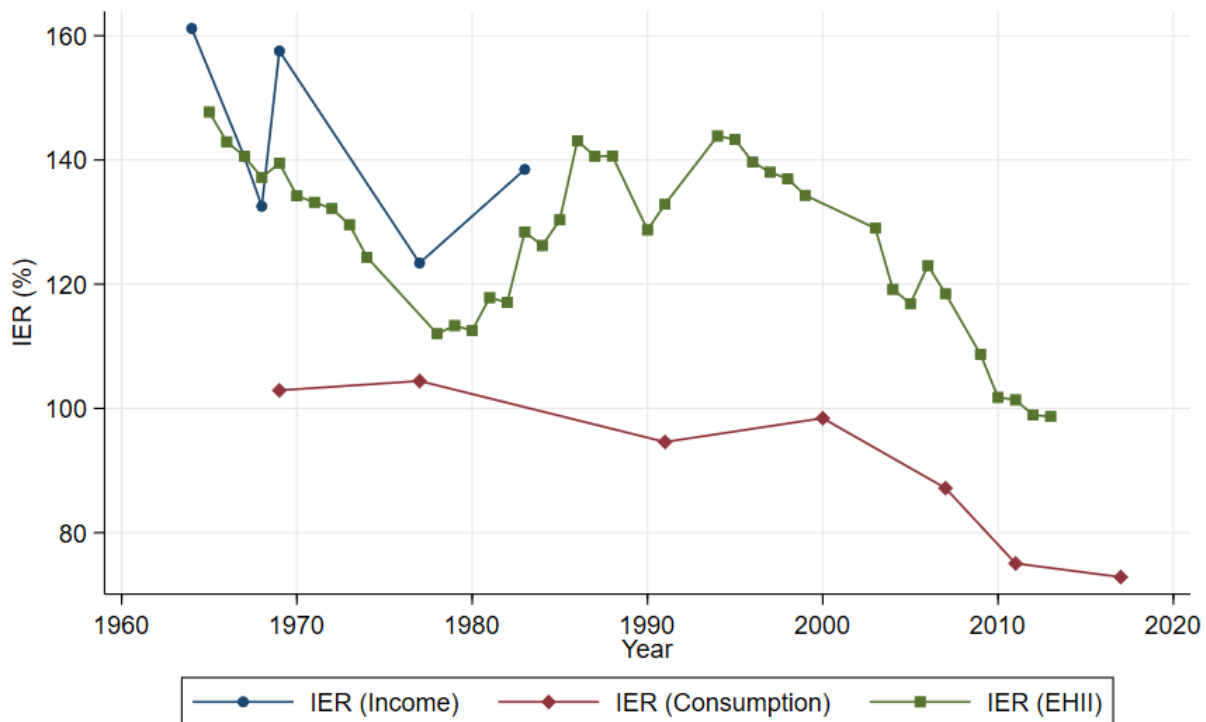

Figure 8: Inequality extraction ratios, social minimum IPF, 1964-2017.
Source: Authors' calculations.

4. Growth, Inequality, Poverty, and Policy

In this section, we proceed in two steps. First, we gather all the evidence on growth, poverty, and inequality in Tanzania from 1961 to the present presented so far and highlight the links in the G-I-P triangle as we observe them in Tanzania. Then, we contextualise those links by focusing on the different development strategies and policies pursued under different regimes.

4.1. The Growth-Inequality-Poverty Triangle Revisited

Figure 9 shows our preferred series for growth, inequality, poverty, and extraction juxtaposed. To facilitate the interpretation of this figure, we calculated correlation coefficients that measure the strength and direction of the relationship between the different series. These are presented in Table 3. While this does not explain the direction of causality in the respective links of the triangle, it does help to see where strong links exist.

Looking at Figure 9 and Table 3, we can observe a strong negative correlation between GDP per capita and both extraction ratios and poverty headcount ratios. The correlation between GDP and poverty headcount ratios at the national and the international line since 1990 is particularly strong, with a correlation coefficient of -0.91

and -0.93, respectively.[11] Similarly, the coefficient between GDP and the social minimum consumption-based IER is -0.90 (Table 3). In other words, the link between poverty and growth is very strong, and in the periods when GDP per capita increased, extraction ratios and poverty headcount ratios decreased.

Gini coefficients, on the other hand, remained relatively stable over the entire period and show only weak correlation with the other indicators. As one would expect based on the ample literature on inequality, the correlation between GDP per capita and Gini coefficients is positive (that is, economic growth tends to be accompanied by increasing inequality), although the growth-inequality link is weak overall. If we look at sub-periods in our sample, however, the picture changes: in the pre-1990 period, we find a stronger negative correlation between GDP per capita and inequality, while in the post-1990 period, the correlation turns positive and is stronger than over the entire period (see Figure 9 and Table 3). While the link between inequality and growth remains weak in the sub-period analysis, this indicates that the relationship between the two indicators did change after 1990. Moreover, as the decline in extraction ratios after 2000 shows, even though growth was accompanied by a slight increase in inequality, the increase in mean incomes outpaced the increase in income inequality. In other words, Tanzanian society more broadly shared in the gains of growth.

Interestingly, while our evidence concerning the poverty-inequality relationship is very mixed, the correlation between the consumption-based Gini and the poverty headcount ratio at the international poverty line since the 1990s is negative: while inequality has been increasing since the 1990s, poverty saw a decline. This correlation is also the strongest of all the correlations of inequality estimates with the other series (Table 3).

Table 3: Correlation coefficients for the different series in Figure 9.

Indicators	Correlation coefficient
GDP : IER (Physical minimum, gross income Gini)	-0.84
GDP : IER (Social minimum, consumption Gini)	-0.90
GDP : Poverty headcount ratio (National)	-0.59
GDP : Poverty headcount ratio (National), post-1990	-0.91
GDP : Poverty headcount ratio (International)	-0.93
GDP : Gini (Gross income)	0.18
GDP : Gini (Gross income), pre-1990	-0.26
GDP : Gini (Gross income), post-1990	0.36
GDP : Gini (Consumption)	0.28
Poverty headcount ratio (National) : Gini (Gross income)	0.11
Poverty headcount ratio (National) : Gini (Consumption)	0.29
Poverty headcount ratio (International): Gini (Gross income)	-0.11
Poverty headcount ratio (International) - Gini (Consumption)	-0.58
Gini (Gross income) : IER (Physical minimum, gross income Gini)	0.33
Gini (Consumption) : IER (Social minimum, consumption Gini)	0.13

---

[11] A correlation coefficient of 1 means that there is a perfect positive relationship between two variables – if one variable increases, so does the other. A correlation coefficient of -1 means that there is a perfect negative relationship – if one variable increases, the other decreases (they move in opposite directions). A correlation coefficient of 0 means that there is no linear relationship between the two variables.
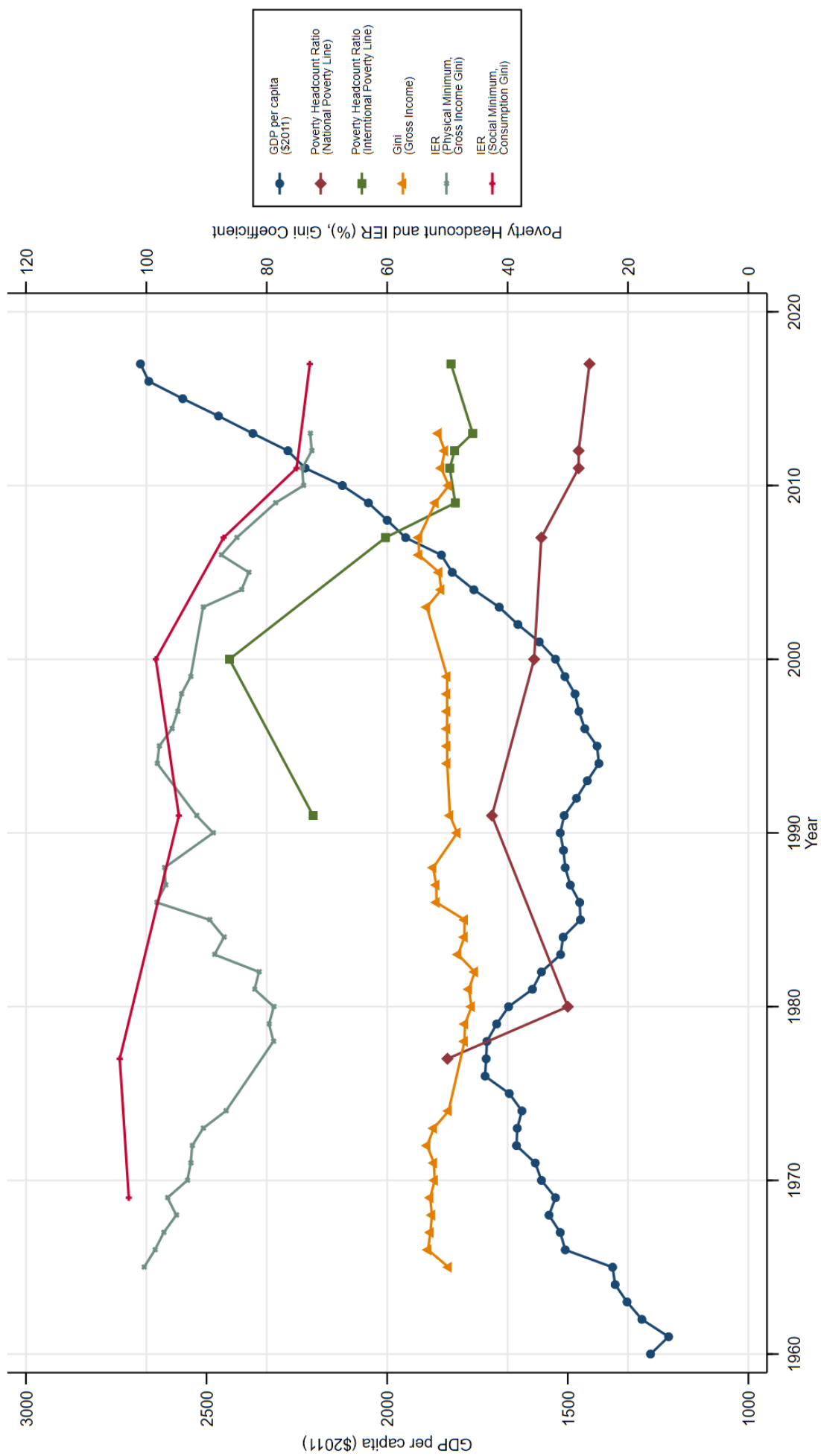
Figure 9: Growth, inequality, poverty, and extraction in Tanzania, 1960-2017.
Sources: See Figures 2 through 8.

Prima facie, one could agree with the position of Dollar and Kraay (2002) and Dollar, Kleineberg, and Kraay (2013) that growth in Tanzania was good for the poor, even though, as seen in Figure 9, the poverty-reducing effects lagged. On the other hand, while gross income inequality estimates are relatively high, consumption-based inequality estimates are low (for Africa), so that Bourguignon's (2004) and Ravallion's (2005) arguments concerning the impact of inequality on the poverty elasticity of growth cannot be dismissed, either. Importantly, the relative long-term stability of inequality and the changes in the correlation between inequality and GDP per capita before and after 1990, hint at the importance of non-economic determinants of the level of inequality observed.

4.2. Development Strategies across Six Decades

To identify these determinants and analyse their wider impact on the links between growth, inequality, and poverty, we investigate the development strategies employed under the different policy regimes in Tanzania. Since independence, there have been four such regimes: 1) the development era, beginning in the late colonial period and lasting until 1967 (Cooper, 2002, p.103); 2) African socialism (*ujamaa*), introduced with the Arusha Declaration in 1967 and lasting until the early 1980s (Saul, 2012); 3) structural adjustment, which began in 1986 and lasted to 1996 (Harrison, 2001; Meertens, 2000); and 4) the revival of economic planning beginning in the late 1990s (Cooksey, 2011; Wuyts & Kilama, 2016).

During the development era, which began after World War II while Tanzania was still under British colonial rule, the government's development strategy focused on growth. Broad-based development and poverty reduction were stated goals, yet they were not pursued through targeted policies. Questions of inequality were of little concern (Cooper, 2002, pp.92–96; Coulson, 2013, pp.146–148, 156–158, 183–187). Under this regime, Tanzania saw moderate economic growth, which began in the 1950s and continued, at a more rapid pace, after independence. The average GDP growth rate between 1951 and 1966 was 1.7 percent and was 4.4 percent for the five years between independence in 1961 and the Arusha declaration in 1967. Most of this growth was driven by agricultural production, although manufacturing and mining increased in importance (Bryceson, 2010; Jerven, 2014). Despite ambitions to promote broad-based development (Twining, 1951), the actual policies implemented led to increasingly uneven development and a narrowing of opportunities for the broader population. In agriculture, the focus lay on a series of targeted development schemes in areas with existing cash crop agriculture and later narrowed even further to focus only on so-called progressive individuals (Coulson, 1977; Ruthenberg, 1964, pp.59–60). The focus on agricultural development also led to the neglect of the non-agricultural formal sector, with the result that employment in this sector entered a relative decline from the mid-1950s onwards (Paton, 1995, pp.184–185).

Even though income inequality was not a main concern of the government, the income share of the top 0.1 percent declined during this period (see Figure 5), driven by the Africanisation of the public sector and the wider economy. In 1950, the top 0.1 percent still earned around 8.5 percent of total income. By 1960, the share had fallen to 6.5 percent, and declined further to 5.3 percent by 1967 (Atkinson, 2011, 2015b). This decline in top income shares, however, does not reflect the development of inequality in Tanzania in its entirety. Especially in the colonial period, but also beyond, racial differences in incomes and employment opportunities were high (Frenz, 2014; Ghai & Ghai, 1965; Rothermund, 1965) and insufficient investment in human capital created a very unequal wage structure in the formal sector (Kifile, 1963; Klocke, 2021a). Uneven development in African agriculture resulted in an uneven spread of the incomes from cash crops. Most went to a few regions only, and while small-scale growers did benefit from a boom in export prices, a small elite of large-scale farmers earned the lion's share of cash incomes (Klocke, 2021b).

In terms of growth-inequality links during this period, income inequality was, to a large extent, an *outcome* of the growth process, and did not directly impact the rate of growth. However, the inequality of opportunities underlying the observed levels of income inequality hampered the overall development process. It not only meant that many Tanzanians did not benefit significantly from economic development, but also that they could not contribute to the development process and higher rates of growth.

Taken together, the moderate pace of economic growth, its uneven spread, and resulting limited opportunities meant that Tanzania at independence, and throughout the 1960s, was one of the poorest countries in sub-Saharan Africa (Bank of Tanzania, 1983, p.1; Ferreira, 1996). The high IERs observed for the mid-1960s (Figure 9) reflect this combination of low levels of overall development and an uneven distribution of the gains from the growth that took place.

The persistence of poverty, income inequality, and unequal opportunities eventually prompted the Nyerere government to break with the strategy of the development era. The Arusha Declaration of 1967 signalled this break and heralded a new development strategy, African socialism (*ujamaa*) (Bank of Tanzania, 1983, pp.1–3; Coulson, 2013, pp.214–216; Decker, 2008; Nyerere, 1967). By that time, the Tanzanian government had become acutely aware of the complex interrelations between growth, inequality, and poverty and tried to achieve more equitable development and higher rates of poverty reduction by explicitly addressing existing economic inequalities (Bank of Tanzania, 1983, p.234; Bryceson, 2010; Havnevik, 1993, pp.42–43; Nyerere, 1967, 1977). To this end, widespread state control was implemented over all economic activities. Enterprises and plantations were nationalised, minimum wages were set, and the public sector salary structure was reformed to reduce racial and overall wage inequality (Bank of Tanzania, 1983, pp.23–24; Ferreira, 1996; Havnevik, 1993, pp.29, 42–49; Sarris & van den Brink, 1993, p.48).

In the rural sector, the government embarked upon its most ambitious project to reduce income inequality and expand opportunities: villagisation. The goal of villagisation was the resettlement of the entire population into centralised *ujamaa* villages. This was considered a precondition for the achievement of modern development and the expansion of economic opportunities for the population (Bank of Tanzania, 1983, pp.22–23; Havnevik, 1993, p.44). Centralisation was also considered essential for the efficient provision of public services such as education and healthcare to wider parts of the population (Bryceson, 2010). Within the *ujamaa* villages, inhabitants were exhorted to participate in collectivised agricultural production as a means to increase agricultural output while simultaneously preventing the proliferation of rural capitalists and decreasing income inequality (Bigsten & Danielson, 2001; Bryceson, 2010; Collier, Radwan & Wangwe, 1990, pp.2–6; Havnevik, 1993, pp.44–49). Initially, villagisation progressed slowly, so that the government shifted to coercive resettlement in 1974. After that, the pace increased significantly and by 1979, almost the entire rural population of Tanzania had been resettled (Bank of Tanzania, 1983, pp.23–24, 79).

African socialism showed initial success. As growth continued, poverty declined; inequality fell, and the IER fell with it (Figure 9). Here, we clearly see the impact development strategies can have on the links in the G-I-P triangle, especially the link between growth and inequality. A shift in strategy, backed by a series of concrete policies, changed the relationship between growth and inequality. Whereas previously, growth that was based on uneven development led to higher income inequality, African socialism resulted in an inequality decline while mean incomes increased. Consequently, growth led to increasing poverty reduction and a noticeable decline in the IER.

These positive developments were not to last, however. Villagisation and nationalisation strained the Tanzanian economy, especially agricultural production (Coulson, 2013, pp.228–236). Against this backdrop, a series of external shocks, beginning with the Oil Crisis in 1973, set in motion a cascade of balance of payments and debt problems, import shortages, and a collapse in agricultural exports.[12] There has been a lively debate as to whether internal or external factors were the main culprits of the economic crisis (for an overview, see Sarris & van den Brink, 1993, p.32). The consensus is that, while external factors played a role, the main problem lay with internal politics. Specifically, villagisation and extensive state control over the economy hampered the expansion of peasant production and prevented adaptation in the face of external crises (Biermann & Wagao, 1986; Ferreira, 1996; Lofchie, 1978; Sarris & van den Brink, 1993, pp.29–32).[13]

---

[12] In addition to the 1973 Oil Crisis, these were Tanzania's war with Uganda in 1979, the second Oil Crisis in 1979-80, and a drying-up of international aid flows from 1980 (Bevan et al., 1988, p.63).

[13] In addition to the main cause(s) of the crisis, the exact timing and extent of the crisis and its impact on growth and poverty reduction have been a subject of much debate. On the one extreme, some argue that incomes declined up to 50 percent during the peak of the crisis in the late 1970s (Bevan et al., 1988; Cooper, 2002, pp.179–180; Havnevik, 1993, p.53; Hyden & Karlstrom, 1993). On the

The wave of crises throughout the 1970s led to the collapse of the Tanzanian economy. Rural and urban incomes declined significantly, GDP per capita fell, and poverty increased across the board (Bank of Tanzania, 1983, pp.234–236; Bevan et al., 1988; Collier, Radwan & Wangwe, 1990, pp.8–9, 65). By the late 1970s, most of the economic gains made since independence had been reversed and the majority of the Tanzanian population again lived in (absolute) poverty (Mugomba, 1978). Thus, in terms of economic development, the strategy of African socialism proved to be a failure. Some successes were achieved, however, especially regarding inequalities of income and opportunity. While "all boats float[ed] lower" after the crisis (Bank of Tanzania, 1983, p.247), the relative decline in incomes was stronger in urban areas and both national-level income inequality and rural-urban inequality were reduced (Bank of Tanzania, 1983, p.37; Bevan et al., 1988; Bryceson, 2010; Sarris & van den Brink, 1993, p.188). Villagisation and land reform made access to land relatively easy for all Tanzanians, and even by 1990, access to land was generally not considered a problem. Access to education and social services was also improved, further reducing inequality of opportunities (Bank of Tanzania, 1983, pp.43–44; Biermann & Wagao, 1986; Collier, Radwan & Wangwe, 1990, pp.15–17).[14]

The economic collapse initiated the transition to the next development strategy, structural adjustment. This transition was a slow process that took almost the entire 1980s. The Nyerere government wanted to safeguard the gains made in the provision of social services and the reduction in economic inequality. Thus, it refused to concede to the conditions of the structural adjustment programme proposed by the International Monetary Fund. Only after Nyerere stepped down from the country's leadership in 1986 and after home-grown structural adjustment efforts failed did the government accept a multilateral structural adjustment programme (Biermann & Wagao, 1986; Bigsten & Danielson, 2001; Harrison, 2001; Hyden & Karlstrom, 1993).

The primary focus of structural adjustment as a development strategy returned to economic growth, under the assumption that it would directly lead to poverty reduction (Ferreira, 1996). While structural adjustment did halt the decline in GDP per capita, sustained growth did not return until the end of the programmes in 1996 (Atkinson & Lugo, 2010; Ellis & Mdoe, 2003; Sarris & van den Brink, 1993, p.3). Overall, the growth performance in the decade from 1986 to 1996 was poor, with the GDP growth averaging -0.31 percent annually. Simultaneously, poverty and inequality increased, and the IER returned to its early post-independence highs (Figure 9). This trend aligns with the general assessment of the impact of the structural adjustment programmes in sub-Saharan Africa. While they often led to a return of (slow) economic growth, they also resulted in very limited, if any, reductions in poverty (Dulani, Mattes & Logan, 2013; Fosu, 2018b).

After the structural adjustment period ended in 1996, the last shift in development strategy took place. This period saw a gradual return of economic planning, with an explicit focus not only on growth, but also on a rapid structural transformation of the Tanzanian economy away from agriculture and towards industry (Cooksey, 2011; Whitfield et al., 2017, pp.73–77, 219–224; Wuyts & Kilama, 2016). This shift was accompanied by a return of sustained economic growth, with an average GDP growth rate of 3.5 percent annually between 2000 and 2016. While this growth episode saw a slow but steady increase in inequality, poverty saw a rapid and significant decline after the turn of the millennium (Figure 9). Here, we observe the classic interrelations between growth, inequality, and poverty. Even though growth leads to increasing inequality, it is still good for the poor. The decline in the IERs also supports this impression and after 2000, the social minimum IER for consumption-based Gini coefficients fell substantially below 100 percent for the first time since independence.

These observations stand in contrast with earlier concerns that post-adjustment economic growth in Tanzania did not have much of an impact on poverty reduction (see, for example, Atkinson & Lugo, 2010). Recent research provides a solution to this discrepancy and offers additional insights into the growth-poverty link and the long-term impacts of the two preceding development strategies (Brockington, 2021; Howland, Noe & Brockington, 2021; Ponte & Brockington, 2020). Instead of looking at poverty through the lens of consumption, as is done in

---

other end, arguments have been made that the decline in real incomes was significantly less severe, if not negligible, for all but the urban middle- and upper-income earners (Bryceson, 2010; Sarris & van den Brink, 1993, pp.64, 87, 150–159).

[14] Some researchers, like Sender and Smith (1990), are, however, sceptical that these achievements were as widespread or long-lasting as claimed.

the calculations of the poverty headcount ratios, the focus here is on assets. Assets, especially access to land and education, have long been identified as important indicators when it comes to questions concerning the possibility for the poor to move out of poverty (Collier, Radwan & Wangwe, 1990, p.106; Ellis & Mdoe, 2003; Green, 2005; Sender & Smith, 1990, pp.43–48). In their recently published study, Ponte and Brockington (2020) find that the possession and distribution of assets is an area in which significant changes have taken place over the last decades, leading to the emergence of a rural middle class across Tanzania. This helps explain why poverty reduction lagged behind growth through the 1990s and increased significantly after the turn of the millennium. The issue was neither that growth was overestimated nor that the levels of poverty were underestimated (Pauw & Thurlow, 2011). Growth led to increased incomes across the board, yet these incomes were not exclusively directed towards increased consumption. Instead, they were invested to improve other dimensions of well-being and provide higher incomes in the future. Here, we also see the longer-term impact of the *ujamaa* policies, which resulted in a more equal distribution of and more widespread access to the two most important assets of the (rural) poor, land and education.

A final puzzle remains: the trend in growth, inequality, and poverty over the last decade. During this period, economic growth remained strong, yet poverty reduction slowed significantly, while inequality estimates remained relatively constant (see Figure 9). It is too early to tell why this is the case and as this paper has shown, drawing strong conclusion based on the performance of the macro indicators for growth, inequality, and poverty over only a few recent years can lead to misleading conclusions. One possible explanation, however, is that recent GDP growth rates are again overestimated, which would match up with concerns expressed both by scholars and in the media recently (Jerven, 2013; The Economist, 2020).

The preceding sections have demonstrated the issues of conflicting data and/or missing data for G-I-P estimates in post-colonial Tanzania, but using triangulation, we are in position to give a broad overview of the development experience, summarised in Table 4 below.

Table 4: Summary of the trends in growth, poverty, inequality, and extraction in relation to the prevalent development strategy in different time periods.

Period	Growth	Inequality	Poverty	Extraction	Development strategy
1961-66	Strong	Stagnant	Decreasing	Decreasing	Growth
1967-75	Moderate	Decreasing	Decreasing	Decreasing	Distribution
1976-85	Decreasing	Increasing	Increasing	Increasing	None (crisis)
1986-96	Stagnant	Stagnant	Stagnant/ Increasing	Stagnant	Growth
1997-2017	Strong	Stagnant/ increasing	Decreasing/ stagnant	Decreasing	Pro-poor growth

5. Conclusion

The Tanzanian experience illustrates the difficulties of disentangling the nexus between growth, inequality, and poverty, and highlights the pitfalls of focusing on short-term trends or single indicators only. The transmission mechanisms between these three indicators are not straightforward, and transmission can take time. From a long-term perspective covering almost the entirety of Tanzania's post-independence history, many earlier calls for concern over rising inequality or a lack of poverty reduction despite several years of economic growth proved premature. Despite these difficulties, we also show that, through a careful reconstruction of the data and triangulation, it is possible to gain clarity concerning long-term development paths.

We draw several general conclusions. First, the nature of the different linkages in the G-I-P triangle is not predetermined. Rather, different development strategies and concrete political decisions play an important role in defining how different indicators interact with each other. The Tanzanian experience confirms that growth does not always "trickle down" to the poor. For economic growth to realise its full potential in terms of poverty reduction, the development strategy is essential. In the late colonial and early independence period, a lack of inclusivity meant that the benefits of development were concentrated amongst few groups in society. When growth was accompanied by a political commitment towards poverty reduction, in contrast, this goal was realised. Still, we see that, in a very poor country, growth is an important precondition for people to be able to move out of poverty. If there is little to distribute, then the poverty-reducing potential of redistribution is limited.

Second, the role of inequality in the development process is ambiguous and observed levels of income inequality are difficult to interpret. In Tanzania, high levels of income inequality after independence were not a constraint on economic growth overall and could be overcome through dedicated policy intervention. The recent increase in income inequality is not necessarily cause for concern, as strong economic growth was accompanied by a significant decline in poverty. Conversely, not all reductions in income inequality are unambiguously positive. The same policies which helped overcome the legacies of colonial-era inequality also caused an economic crisis that negatively impacted the entire Tanzanian population and led to a reduction in inequality because it affected the upper ends of the income distribution more. While the income distribution was more equitable as a result, the cost was almost two decades of economic stagnation while the majority of the population lived below the poverty line.

Third, the inequality extraction ratio is a useful tool to make sense of the ambiguous role of income inequality and to contextualise trends in income inequality into the wider processes of growth and poverty reduction. Thus, while income inequality in Tanzania always appeared relatively low, this was often rooted in the overall low level of economic development. In many periods, the Tanzanian economy produced little surplus above subsistence which would have allowed for higher levels of inequality, either through uneven development or redistribution from the bottom to the top.

Finally, the Tanzanian experience highlights that what matters most for growth and poverty reduction is not so much the inequality of outcomes, but the inequality of opportunities. When opportunities to participate in economic activities were extended to broader sections of society, economic growth was stronger and led to higher rates of poverty reduction. Here, *inclusivity* did not only mean that economic growth "*results* in a wider access to sustainable socio-economic opportunities for a broader number of people" (African Development Bank 2012, p.2, emphasis by the authors). Instead, growth was inclusive because it was also *driven* by those who had acquired wider access to economic opportunities.

The Tanzanian case demonstrates that history does not strictly determine the future, and that, with sufficient political will and the right development strategy, it is possible to break from development paths that are sometimes portrayed as inevitable. Finding the right development strategy, however, is a complicated endeavour. The expansion of opportunities is crucial, yet not all expansions of opportunities are created equal. An authoritarian, top-down approach as seen during the period of African socialism can, despite the best intentions, lead to adverse consequences from which society might take a long time to recover.

6. Bibliography

6.1. Databases

Feenstra, Robert C., Robert Inklaar and Marcel P. Timmer (2015), "The Next Generation of the Penn World Table" American Economic Review, 105(10), 3150-3182, Available Online: www.ggdc.net/pwt

Maddison Project Database, version 2020. Bolt, Jutta and Jan Luiten van Zanden (2020), "Maddison style estimates of the evolution of the world economy. A new 2020 update", Available Online: https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2020

Milanovic, Branko (2014). All the Ginis, Available Online: https://datacatalog.worldbank.org/dataset/all-ginis-dataset

University of Texas Inequality Project, Estimated Household Income Inequality Data Set (EHII), Available Online: http://utip.lbj.utexas.edu/datasets.html

UNU-WIDER, World Income Inequality Database (WIID). Version 31 May 2021, Available Online: https://www.wider.unu.edu/database/world-income-inequality-database-wiid

The World Bank, PovcalNet (2021), Available Online: http://iresearch.worldbank.org/PovcalNet/data.aspx

The World Bank, World Development Indicators (2021), Available Online: https://databank.worldbank.org/source/world-development-indicators/

6.2. References

Abdullah, A., Doucouliagos, H. & Manning, E. (2015). Does Education Reduce Income Inequality? A Meta-Regression Analysis, *Journal of Economic Surveys*, vol. 29, no. 2, pp.301–316.

Acemoglu, D., Johnson, S. & Robinson, J. A. (2002). Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution., *The Quarterly Journal of Economics*, vol. 117, no. 4, pp.1231–1294.

Acemoglu, D., Johnson, S. & Robinson, J. A. (2004). Institutions as the Fundamental Cause of Long-Run Growth, Working Paper, 10481, National Bureau of Economic Research.

Acemoglu, D. & Robinson, J. A. (2010). Why Is Africa Poor?, *Economic History of Developing Regions*, vol. 25, no. 1, pp.21–50.

Adelman, I. & Morris, C. T. (1971). An Anatomy of Income Distribution in Developing Nations: A Summary of Findings, Economic Staff Working Paper, 116, Washington, DC: International Bank for Reconstruction and Development.

Adelman, I. & Morris, C. T. (1972). Who Benefits from Economic Development?, International Meeting of Directors of Development Research and Training Institutes, Belgrade, Yugoslavia, August 1972.

African Development Bank (ed.). (2012). African Economic Outlook 2012, Paris: OECD.

Alvaredo, F., Chancel, L., Piketty, T., Saez, E. & Zucman, G. (2017). Global Inequality Dynamics: New Findings from WID.World, *American Economic Review*, vol. 107, no. 5, pp.404–409.

Alvaredo, F., Chancel, L., Piketty, T., Saez, E. & Zucman, G. (2018). World Inequality Report 2018, Cambridge: Harvard University Press.

Amendola, A., Easaw, J. & Savoia, A. (2013). Inequality in Developing Economies: The Role of Institutional Development, *Public Choice*, vol. 155, no. 1–2, pp.43–60.

Archibong, B., Coulibaly, B. & Okonjo-Iweala, N. (2021). Washington Consensus Reforms and Economic Performance in Sub-Saharan Africa: Lessons From the Past Four Decades, Working Paper, 27, Washington, DC: Africa Growth Initiative at Brookings.

Arndt, C., McKay, A. & Tarp, F. (eds). (2016). Growth and Poverty in Sub-Saharan Africa, Oxford: Oxford University Press.

Arrighi, G. (2002). The African Crisis: World Systemic and Regional Aspects, *New Left Review*, vol. 15, pp.5–36.

Atkinson, A. B. (2011). Evidence on Top Incomes in Tanzania 1948-1970, Working Paper, 11/0070, London: International Growth Centre.

Atkinson, A. B. (2015a). Inequality: What Can Be Done?, Cambridge: Harvard University Press.

Atkinson, A. B. (2015b). Top Incomes in East Africa Before and After Independence, Working Paper, 2015/2, Wealth and Income Database.

Atkinson, A. B. & Lugo, M. A. (2010). Growth, Poverty and Distribution in Tanzania, Working Paper, 10/0831, London: International Growth Centre.

Banerjee, A. V. & Iyer, L. (2005). History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India, *The American Economic Review*, vol. 95, no. 4, pp.1190–1213.

Bank of Tanzania. (1983). Tanzania: Twenty Years of Independence (1961-1981): A Review of Political and Economic Performance, Dar es Salaam: Bank of Tanzania.

Beegle, K., Christiaensen, L., Dabalen, A. L. & Gaddis, I. (2016). Poverty in a Rising Africa, Washington, DC: The World Bank.

Beegle, K., De Weerdt, J., Friedman, J. & Gibson, J. (2012). Methods of Household Consumption Measurement through Surveys: Experimental Results from Tanzania, *Journal of Development Economics*, vol. 98, no. 1, pp.3–18.

Belghith, N. B. H., Lopera, M. A., Ndip, A. E. & Karamba, W. (2018). Analysis of the Mismatch between Tanzania Household Budget Survey and National Panel Survey Data in Poverty & Inequality Levels and Trends, Policy Research Working Paper, 8361, Washington, DC: The World Bank.

Bevan, D. L., Bigsten, A., Collier, P. & Gunning, J. W. (1988). Incomes in the United Republic of Tanzania During the 'Nyerere Experiment', in W. van Ginneken (ed.), *Trends in Employment and Labour Incomes: Case Studies on Developing Countries*, Geneva: International Labour Office, pp.61–84.

Bienefeld, P. M. (1989). Structural Adjustment and Rural Employment in Tanzania, Research Paper, Geneva: International Labour Office.

Biermann, W. & Wagao, J. (1986). The Quest for Adjustment: Tanzania and the IMF, 1980-1986, *African Studies Review*, vol. 29, no. 4, pp.89–104.

Bigsten, A. & Danielson, A. (2001). Tanzania: Is the Ugly Duckling Finally Growing Up?, Uppsala: Nordiska Afrikainstitutet.

Birdsall, N. (2006). The World Is Not Flat: Inequality and Injustice in Our Global Economy, Annual Lecture, 9, Helsinki: UNU-WIDER, Available Online: https://www.wider.unu.edu/publication/world-not-flat [Accessed 21 February 2019].

Bolt, J., Inklaar, R., de Jong, H. & van Zanden, J. L. (2018). Rebasing 'Maddison': New Income Comparisons and the Shape of Long-Run Economic Development, GGDC Research Memorandum, GD-174, Groningen Growth and Development Center.

Bourguignon, F. (2004). The Poverty-Growth-Inequality Triangle, Indian Council for Research on International Economic Relations, New Delhi, 4 February 2004.

Brockington, D. (2021). Persistent Peasant Poverty and Assets. Exploring Dynamics of New Forms of Wealth and Poverty in Tanzania 1999–2018, *The Journal of Peasant Studies*, vol. 48, no. 1, pp.201–220.

Bryceson, D. F. (2010). Agrarian Fundamentalism or Foresight? Revisiting Nyerere's Vision for Rural Tanzania, in K. Havnevik & A. Isinika (eds), *Tanzania in Transition: From Nyerere to Mkapa*, Dar es Salaam: Mkuki na Nyota Publishers, pp.71–98.

Checchi, D. (2001). Education, Inequality and Income Inequality, Research Paper, DARP 52, London: LSE STICERD.

Chen, S., Datt, G. & Ravallion, M. (1993). Is Poverty Increasing in the Developing World?, Washington, DC: The World Bank.

Clementi, F., Fabiani, M. & Molini, V. (2019). The Devil Is in the Detail: Growth, Inequality and Poverty Reduction in Africa in the Last Two Decades, *Journal of African Economies*, vol. 28, no. 4, pp.408–434.

Coatsworth, J. H. (2008). Inequality, Institutions and Economic Growth in Latin America, *Journal of Latin American Studies*, vol. 40, no. 3, pp.545–569.

Collier, P. & Gunning, J. W. (1999). Explaining African Economic Performance, *Journal of Economic Literature*, vol. 37, no. 1, pp.64–111.

Collier, P., Radwan, S. & Wangwe, S. (1990). Labour and Poverty in Rural Tanzania: Ujamaa and Rural Development in the United Republic of Tanzania, Oxford: Clarendon Press.

Cooksey, B. (2011). Marketing Reform? The Rise and Fall of Agricultural Liberalisation in Tanzania, *Development Policy Review*, vol. 29, no. 1, pp.57–81.

Cooper, F. (2002). Africa since 1940: The Past of the Present, Cambridge: Cambridge University Press.

Coulson, A. (1977). Agricultural Policies in Mainland Tanzania, *Review of African Political Economy*, vol. 4, no. 10, pp.74–100.

Coulson, A. (2013). Tanzania: A Political Economy, 2nd edn, Oxford: Oxford University Press.

Cromwell, J. (1977). The Size Distribution of Income: An International Comparison, *Review of Income and Wealth*, vol. 23, no. 3, pp.291–308.

Deaton, A. & Grosh, M. (2000). Consumption in Designing Household Survey Questionnaires for Developing Countries, in M. Grosh & P. Glewwe (eds), *Designing Household Survey Questionnaires for Developing Countries: Lessons from 15 Years of the Living Standards Measurement Study*, Vol. 3, Washington, DC: The World Bank, pp.91–134.

Decker, S. (2008). Dekolonisation Der Wirtschaft? Wirtschaftsnationalismus in Afrika Nach 1945, in F. Boll, B. Bouvier, D. Dowe, A. Kruke, P. von zur Mühlen, M. Schneider, & R. Zimmermann (eds), *Archiv Für Sozialgeschichte: Dekolonisation. Prozesse Und Verflechtungen 1945–1990*, Vol. 48, Bonn: J. H. W. Dietz Nachf., pp.461–486.

Deininger, K. & Squire, L. (1996). A New Data Set Measuring Income Inequality, *The World Bank Economic Review*, vol. 10, no. 3, pp.565–591.

Dollar, D., Kleineberg, T. & Kraay, A. (2013). Growth Still Is Good for the Poor, Policy Research Working Paper, 6568, Washington, DC: The World Bank.

Dollar, D. & Kraay, A. (2002). Growth Is Good for the Poor, *Journal of Economic Growth*, vol. 7, no. 3, pp.195–225.

Dulani, B., Mattes, R. & Logan, C. (2013). After a Decade of Growth in Africa, Little Change in Poverty at the Grassroots, Afrobarometer Policy Brief, Afrobarometer.

Easterly, W. (2001). The Lost Decades: Developing Countries' Stagnation in Spite of Policy Reform 1980-1998, *Journal of Economic Growth*, vol. 6, no. 2, pp.135–157.

Easterly, W. (2007). Inequality Does Cause Underdevelopment: Insights from a New Instrument, *Journal of Development Economics*, vol. 84, no. 2, pp.755–776.

Easterly, W. (2019). In Search of Reforms for Growth: New Stylized Facts on Policy and Growth Outcomes, NBER Working Paper, 26318, National Bureau of Economic Research.

Easterly, W. & Levine, R. (1997). Africa's Growth Tragedy: Policies and Ethnic Divisions, *The Quarterly Journal of Economics*, vol. 112, no. 4, pp.1203–1250.

Ellis, F. & Mdoe, N. (2003). Livelihoods and Rural Poverty Reduction in Tanzania, *World Development*, vol. 31, no. 8, pp.1367–1384.

Engerman, S. L. & Sokoloff, K. L. (2002). Factor Endowments, Inequality, and Paths of Development among New World Economies, *Economía*, vol. 3, no. 1, pp.41–109.

Feenstra, R. C., Inklaar, R. & Timmer, M. P. (2015). The Next Generation of the Penn World Table, *American Economic Review*, vol. 105, no. 10, pp.3150–3182.

Ferreira, M. L. (1996). Poverty and Inequality During Structural Adjustment in Rural Tanzania, Policy Research Working Paper, 1641, Washington, DC: The World Bank.

Fisher, J., Johnson, D. S. & Smeeding, T. M. (2015). Inequality of Income and Consumption in the U.S.: Measuring the Trends in Inequality from 1984 to 2011 for the Same Individuals, *Review of Income and Wealth*, vol. 61, no. 4, pp.630–650.

Forster, T., Kentikelenis, A., Reinsberg, B., Stubbs, T. & King, L. (2017). How Structural Adjustment Programmes Affect Inequality: A Disaggregated Analysis of IMF Conditionality, 1980–2014, Working Paper.

Fosu, A. K. (2018a). Economic Structure, Growth, and Evolution of Inequality and Poverty in Africa: An Overview, *Journal of African Economies*, vol. 27, no. 1, pp.1–9.

Fosu, A. K. (2018b). The Recent Growth Resurgence in Africa and Poverty Reduction: The Context and Evidence, *Journal of African Economies*, vol. 27, no. 1, pp.92–107.

Frankema, E. & van Waijenburg, M. (2018). Africa Rising? A Historical Perspective, *African Affairs*, vol. 117, no. 469, pp.543–568.

Frenz, M. (2014). Community, Memory, and Migration in a Globalizing World: The Goan Experience, c. 1890-1980, New Delhi: Oxford University Press.

Galbraith, J. K. (2019a). Sparse, Inconsistent and Unreliable: Tax Records and the World Inequality Report 2018, *Development and Change*, vol. 50, no. 2, pp.329–346.

Galbraith, J. K. (2019b). Piketty's World Inequality Review: A Critical Analysis, *Institute for New Economic Thinking*, Available Online: https://www.ineteconomics.org/perspectives/blog/pikettys-world-inequality-review-a-critical-analysis [Accessed 28 February 2019].

Galbraith, J. K., Choi, J., Halbach, B., Malinowska, A. & Zhang, W. (2016). A Comparison of Major World Inequality Data Sets: LIS, OECD, EU-SILC, WDI, and EHII, *Research in Labour Economics*, vol. 44, pp.1–48.

Galbraith, J. K., Halbach, B., Malinowska, A., Shams, A. & Zhang, W. (2014). UTIP Global Inequality Data Sets 1963-2008: Updates, Revisions and Quality Checks, Working Paper, 68, University of Texas Inequality Project.

Ghai, D. P. & Ghai, Y. P. (1965). Asians in East Africa: Problems and Prospects, *The Journal of Modern African Studies*, vol. 3, no. 1, pp.35–51.

Green, M. (2005). Discourses on Inequality: Poverty, Public Bads and Entrenching Witchcraft in Post-Adjustment Tanzania, *Anthropological Theory*, vol. 5, no. 3, pp.247–266.

Harrison, G. (2001). Post-Conditionality Politics and Administrative Reform: Reflections on the Cases of Uganda and Tanzania, *Development and Change*, vol. 32, no. 4, pp.657–679.

Havnevik, K. J. (1993). Tanzania: The Limits to Development from Above, Uppsala: Nordiska Afrikainstitutet.

Hickel, J. (2017). Is Global Inequality Getting Better or Worse? A Critique of the World Bank's Convergence Narrative, *Third World Quarterly*, vol. 38, no. 10, pp.2208–2222.

Howland, O., Noe, C. & Brockington, D. (2021). The Multiple Meanings of Prosperity and Poverty: A Cross-Site Comparison from Tanzania, *The Journal of Peasant Studies*, vol. 48, no. 1, pp.180–200.

Hyden, G. & Karlstrom, B. (1993). Structural Adjustment as a Policy Process: The Case of Tanzania, *World Development*, vol. 21, no. 9, pp.1395–1404.

Jain, S. (1975). Size Distribution of Income: A Compilation of Data, Washington, DC: The World Bank.

Jerven, M. (2011). Growth, Stagnation or Retrogression? On the Accuracy of Economic Observations, Tanzania, 1961–2001, *Journal of African Economies*, vol. 20, no. 3, pp.377–394.

Jerven, M. (2013). Poor Numbers: How We Are Misled by African Development Statistics and What to Do about It, Ithaca: Cornell University Press.

Jerven, M. (2014). Economic Growth and Measurement Reconsidered in Botswana, Kenya, Tanzania, and Zambia, 1965-1995, Oxford: Oxford University Press.

Jerven, M. (2018). The History of African Poverty by the Numbers: Evidence and Vantage Points, *The Journal of African History*, vol. 59, no. 3, pp.449–461.

Kaiser, P. J. (1996). Structural Adjustment and the Fragile Nation: The Demise of Social Unity in Tanzania, *The Journal of Modern African Studies*, vol. 34, no. 2, pp.227–237.

Kifile, H. O. (1963). Labour Relations in Tanganyika, *International Labour Review*, vol. 88, no. 4, pp.345–365.

Klocke, S. (2021a). Skill, Race, and Income Inequality in the Wage Sector in British Tanganyika, in *Land, Labour, Legacies: Long-term Trends in Inequality and Living Standards in Tanzania, c. 1920-2020*, PhD Dissertation.

Klocke, S. (2021b). Welfare and Unequal Development in Rural Tanganyika, 1920-60, in *Land, Labour, Legacies: Long-term Trends in Inequality and Living Standards in Tanzania, c. 1920-2020*, PhD Dissertation.

Kuznets, S. (1955). Economic Growth and Income Inequality, *The American Economic Review*, vol. 45, no. 1, pp.1–28.

Lecaillon, J., Paukert, F., Morrisson, C. & Germidis, D. (1984). Income Distribution and Economic Development; an Analytical Survey, Geneva: International Labour Office.

Lofchie, M. F. (1978). Agrarian Crisis and Economic Liberalisation in Tanzania, *The Journal of Modern African Studies*, vol. 16, no. 3, pp.451–475.

Meertens, B. (2000). Agricultural Performance in Tanzania under Structural Adjustment Programs: Is It Really so Positive?, *Agriculture and Human Values*, vol. 17, no. 4, pp.333–346.

Milanovic, B. (2009). Global Inequality and the Global Inequality Extraction Ratio: The Story of the Past Two Centuries, Policy Research Working Paper, 5044, Washington, DC: The World Bank.

Milanovic, B. (2013). The Inequality Possibility Frontier: Extensions and New Applications, Policy Research Working Paper, 6449, Washington, DC: The World Bank.

Milanovic, B. (2016). Global Inequality: A New Approach for the Age of Globalization, Cambridge: The Belknap Press of Harvard University Press.

Milanovic, B. (2018). Towards an Explanation of Inequality in Premodern Societies: The Role of Colonies, Urbanization, and High Population Density, *The Economic History Review*, vol. 71, no. 4, pp.1029–1047.

Milanovic, B., Lindert, P. H. & Williamson, J. G. (2011). Pre-Industrial Inequality, *The Economic Journal*, vol. 121, no. 551, pp.255–272.

Mugomba, A. T. (1978). Regional Organisations and African Underdevelopment: The Collapse of the East African Community, *The Journal of Modern African Studies*, vol. 16, no. 2, pp.261–272.

Nyerere, J. (1967). The Arusha Declaration and TANU's Policy on Socialism and Self-Reliance, Available Online: http://www.marxists.org/subject/africa/nyerere/1967/arusha-declaration.htm [Accessed 1 September 2014].

Nyerere, J. K. (1977). The Arusha Declaration Ten Years After, *African Review*, vol. 7, no. 2, pp.1–34.

Obeng-Odoom, F. (2020). Why Inequality Persists in Africa, *Review of African Political Economy*, vol. 47, no. 163, pp.135–143.

Odusola, A., Cornia, G. A., Bhorat, H. & Conceição, P. (2017). Income Inequality Trends in Sub-Saharan Africa: Divergence, Determinants and Consequences, New York: United Nations Development Programme.

Okojie, C. & Shimeles, A. (2006). Inequality in Sub-Sahara Africa: A Synthesis of Recent Research on the Levels, Trends, Effects and Determinants of Inequality in Its Different Dimensions.

Paton, B. (1995). Labour Export Policy in the Development of Southern Africa, Basingstoke: MacMillan Press Ltd.

Paukert, F. (1973). Income Distribution at Different Levels of Development: A Survey of Evidence, *International Labour Review*, vol. 108, no. 2–3, pp.97–125.

Pauw, K. & Thurlow, J. (2011). Agricultural Growth, Poverty, and Nutrition in Tanzania, *Food Policy*, vol. 36, no. 6, pp.795–804.

Piketty, T. (2014). Capital in the Twenty-First Century, Cambridge: The Belknap Press of Harvard University Press.

Piketty, T. (2020). Capital and ideology, Cambridge: The Belknap Press of Harvard University Press.

Ponte, S. & Brockington, D. (2020). From Pyramid to Pointed Egg? A 20-Year Perspective on Poverty, Prosperity, and Rural Transformation in Tanzania, *African Affairs*, vol. 119, no. 475, pp.203–223.

Priyatosh, M. (1968). Implications of Income Distribution for Economic Development: East Africa a Case Study, *Economic Affairs*, vol. 13, no. 1–2, pp.86–99.

Putterman, L. (1995). Economic Reform and Smallholder Agriculture in Tanzania: A Discussion of Recent Market Liberalization, Road Rehabilitation, and Technology Dissemination Efforts, *World Development*, vol. 23, no. 2, pp.311–326.

Ravallion, M. (2001). Growth, Inequality and Poverty: Looking Beyond the Averages, *World Development*, vol. 29, no. 11, pp.1803–1815.

Ravallion, M. (2005). Inequality Is Bad for the Poor, Policy Research Working Paper, 3677, Washington, DC: The World Bank.

Ravallion, M. (2012). Why Don't We See Poverty Convergence?, *The American Economic Review*, vol. 102, no. 1, pp.504–523.

Rodrik, D. (2018). An African Growth Miracle?, *Journal of African Economies*, vol. 27, no. 1, pp.10–27.

Rothermund, I. (1965). Die politische und wirtschaftliche Rolle der asiatischen Minderheit in Ostafrika (Kenya, Tanganyika/Sansibar, Uganda), Berlin: Springer-Verlag.

Ruthenberg, H. (1964). Agricultural Development in Tanganyika, Berlin: Springer-Verlag.

Sachs, J. D., McArthur, J. W., Schmidt-Traub, G., Kruk, M., Bahadur, C., Faye, M. & McCord, G. (2004). Ending Africa's Poverty Trap, *Brookings Papers on Economic Activity*, vol. 2004, no. 1, pp.117–240.

Sachs, J. D. & Warner, A. M. (1997). Sources of Slow Growth in African Economies, *Journal of African Economies*, vol. 6, no. 3, pp.335–376.

Sahn, D. E. & Sarris, A. (1991). Structural Adjustment and the Welfare of Rural Smallholders: A Comparative Analysis from Sub-Saharan Africa, *The World Bank Economic Review*, no. 2 (May 1991), pp.259–289.

Sarris, A. H. & Tinios, P. (1995). Consumption and Poverty in Tanzania in 1976 and 1991: A Comparison Using Survey Data, *World Development*, vol. 23, no. 8, pp.1401–1419.

Sarris, A. & van den Brink, R. (1993). Economic Policy and Household Welfare during Crisis and Adjustment in Tanzania, New York: New York University Press.

Saul, J. S. (2012). Tanzania Fifty Years on (1961–2011): Rethinking Ujamaa, Nyerere and Socialism in Africa, *Review of African Political Economy*, vol. 39, no. 131, pp.117–125.

Sender, J. & Smith, S. (1990). Poverty, Class, and Gender in Rural Africa: A Tanzanian Case Study, London: Routledge.

Simson, R. & Savage, M. (2020). The Global Significance of National Inequality Decline, *Third World Quarterly*, vol. 41, no. 1, pp.20–41.

Smeeding, T. & Latner, J. P. (2015). PovcalNet, WDI and 'All the Ginis': A Critical Review, *The Journal of Economic Inequality*, vol. 13, no. 4, pp.603–628.

Sokoloff, K. L. & Engerman, S. L. (2000). History Lessons: Institutions, Factors Endowments, and Paths of Development in the New World, *The Journal of Economic Perspectives*, vol. 14, no. 3, pp.217–232.

Stiglitz, J. E. (2013). The Price of Inequality, New York: W. W. Norton & Company.

Tabatabai, H. (1996). Statistics on Poverty and Income Distribution: An ILO Compendium of Data, Geneva: International Labour Office.

The Economist. (2000). The Hopeless Continent, *The Economist*, Available Online: http://www.economist.com/node/21519234 [Accessed 17 January 2018].

The Economist. (2011). The Hopeful Continent: Africa Rising, *The Economist*, Available Online: http://www.economist.com/news/special-report/21572377-african-lives-have-already-greatly-improved-over-past-decade-says-oliver-august [Accessed 7 October 2015].

The Economist. (2020). Tanzania's Statistics Smell Wrong, *The Economist*, Available Online: https://www.economist.com/leaders/2020/07/23/tanzanias-statistics-smell-wrong [Accessed 12 January 2021].

Thorbecke, E. & Ouyang, Y. (2018). Is the Structure of Growth Different in Sub-Saharan Africa?, *Journal of African Economies*, vol. 27, no. 1, pp.66–91.

Twining, E. (1951). The Situation in Tanganyika, *African Affairs*, vol. 50, no. 201, pp.297–310.

United Nations. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development, New York: United Nations Department of Economic and Social Affairs.

van de Walle, N. (2009). The Institutional Origins of Inequality in Sub-Saharan Africa, *Annual Review of Political Science*, vol. 12, no. 1, pp.307–327.

van Ginneken, W. & Park, J. (1984). Generating Internationally Comparable Income Distribution Estimates, Geneva: International Labour Office.

Whitfield, L., Therkildsen, O., Buur, L. & Kjaer, A. M. (2017). The Politics of African Industrial Policy: A Comparative Perspective, Cambridge: Cambridge University Press.

Wuyts, M. & Kilama, B. (2016). Planning for Agricultural Change and Economic Transformation in Tanzania?, *Journal of Agrarian Change*, vol. 16, no. 2, pp.318–341.

Young, A. (2012). The African Growth Miracle, *Journal of Political Economy*, vol. 120, no. 4, pp.696–739.