

Facts about inequality in Malawi

Inequality is **path dependent** and characterized by **dualism** between **small subsistence farms and large estates**.



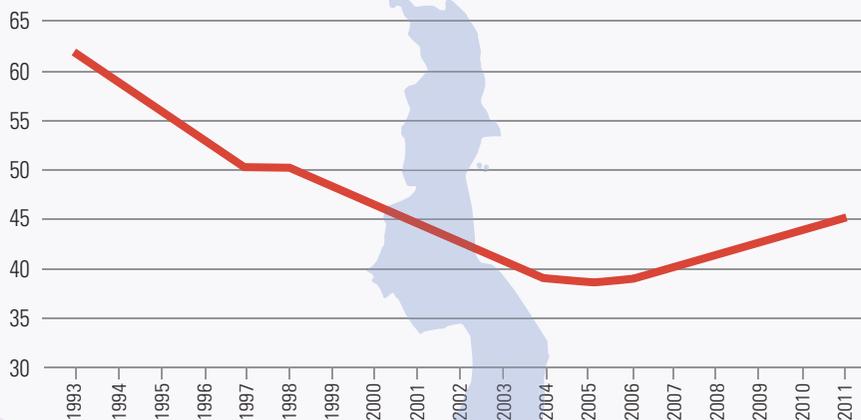
The **Starter Pack Programme** for **small-scale farmers**, a **decline in HIV/AIDS incidence** and the **stabilization of international terms of trade** helped **reduce inequality** (1993-2005).



The shift from **low-inequality agriculture** to **high-inequality sectors** such as services, commerce, transport and construction and urban migration **worsened income inequality** since 2005.



Gini



The shift from **crop production** to **livestock production** and **informal non-farm activities** in urban and peri-urban areas **contributed to a rise** in the **overall Gini**.



Weak economic policies such as **low manufacturing transformation, poor economic governance, low spending on secondary education** and **unaffordable fertilizers for the poor** **contributed to a rise in Gini**.



Addressing inequality calls for a **transition** to a **modern, input-intensive** and **environmentally sustainable agriculture** and a **decline in population growth**.

12 The Dynamics of Income Inequality in a Dualistic Economy: Malawi over 1990-2011¹

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12.1 Context

Malawi is a small country located in Southern Africa. It has a surface area of 118,000 km², a total length of 540 miles and a maximum width of 150 miles. The country is landlocked and the nearest harbours, Beira and Nacala (both located in Mozambique), are around 1,000 km from Lilongwe, Malawi's capital. The country became a British colony in 1893 and gained independence in 1964. In 2011, the last year with inequality data, the total population was 15.5 million and its growth rate was around 3.0 per cent (UN DESA, Population Division, 2015). The population density is high, at 182.6 people per km², against an average of 37 for sub-Saharan Africa (SSA). The mainstay of the economy is agriculture, which currently employs 65.0 per cent of the workforce and generates about 36.0 per cent of GDP and 90.0 per cent of foreign exchange earnings. This sector is characterised, historically, by the dualism between small subsistence farms versus large estates run by white settlers during colonial times and by domestic elites after independence.²

This chapter aims to document and explain the evolution of inequality between 1991 and 2011 to draw policy lessons for the future. The analysis draws on the available literature, statistical data from various national and international sources, seven household consumption surveys and the Rural Income Generating Activities (RIGA) income surveys for 2004 and 2011. Section 12.2 discusses the colonial origins of income inequality and its evolution since 1964. Given the importance of agriculture, Section 12.3 analyses the nature of rural institutions and the agricultural policies followed during the last 30 years and their impact on growth and inequality. Section 12.4 discusses the relationship between inequality and a number of population issues. Section 12.5 tests the extent to which changes in output structure and income sources influenced the inequality surge of 2004-2011. Section 12.6 discusses the extent

¹ The authors acknowledge the comments of an anonymous referee on a prior version of this chapter, which uses data from the RIGA database. The authors would like to thank Marco Tiberti and Alberto Zezza for their initial input on using micro data of the Malawi RIGA project. The usual caveats apply.

² This dualism refers to the coexistence of two types of farming units within the rural economy, smallholder units and estates. These are very different in terms of farm size, types of crops grown, inputs use, farming technologies, outlet markets and share of crop exported.

to which trade, macroeconomic and tax-and-transfers policies affected inequality. Finally, Section 12.7 summarises the main findings and suggests areas for further research.

12.2 The colonial origins of income inequality and its evolution over time

As in most of SSA, tracing the long-term evolution of inequality in Malawi is problematic. First, there are no data for 1985–1993. For other periods, the data originate from different sources (tax returns, unstandardised distributions of consumption per capita and standardised distributions of income per capita) that use different income concepts and focus on different segments of the income distribution. Most important, the design of income and consumption expenditure surveys differs. Thus, Malawi does not escape the usual problems encountered in measuring income and consumption inequality in the region (Cornia and Martorano, 2015).

As suggested by its title, this chapter focuses on the inequality changes of the last two decades. These are strongly path-dependent, however, and to understand their long-term evolution, a good grasp of the colonial origins of inequality and of their post-independence evolution is essential. The evidence on inequality changes is summarised below:

- (a) Malawi became a British protectorate in 1893. Although no precise data are available for this period, pre-colonial asset and income inequality was low because the country exhibited an egalitarian distribution of farmland in a context of communal land tenure system. Most people were engaged in subsistence agriculture under conditions of abundant land supply. Mining and manufacturing were little developed.
- (b) Inequality increased in the aftermath of colonisation. Indeed, the European settlers annexed part of the best land to develop a plantation economy aiming at exporting cash crops such as cotton, tea and tobacco (Sindima, 2002). These changes increased inequality in access to land and human capital and led to the proletarianisation of rural labour through the ‘hut tax’ and ‘thangata system’ (Kwengwere, 2011).³ In line with the ‘centre-periphery development model’ typical of the colonial era, the rulers did not develop manufacturing, education and physical infrastructure, but focused on the creation of ‘extractive institutions’⁴ that allowed them to profit from the country’s resources.

With colonisation, the Malawian economy evolved into four main sectors: a highly productive estate sector controlling a rising share of land, which in 1978, accounted for 16.0 per cent of smallholders’ land (Pryor 1988, Table A2); a sector comprised of a large number of smallholders (1.3 million around 1990); a sector consisting of medium-scale farmers producing maize and cash crops for export (Lele, 1990); and a reserve of cheap labour, which absorbed up to 12.0 per cent of the labour force, employed in the Malawian estates or Southern African plantations and mines. Overall, these shifts raised inequality, as white settlers appropriated a conspicuous part of the land rent and the incomes and wages of the four sectors differed substantially.

³As reported by Kwengwere (2011: 130), “The Thangata System was a system in which land was exchanged for labour, and came into legislation in 1904.”

⁴Acemoglu and Robinson (2012) contrast the growth performance of the ‘Western offshoots’, i.e., Australia, Canada, New Zealand and the United States, where European migrants developed ‘inclusive political and economic institutions’ that paved the way to economic growth and moderate inequality, with that of developing countries, where only a few Europeans settled and the colonial powers created extractive institutions to exploit local resources. The lack of appropriate institutions represented an important hurdle to growth when the colonies became independent.

- (c) Between 1964 and the early 1980s, the country recorded a decline of the income share of the top 0.1 and 0.25 per cent of income earners (Atkinson, 2014) due to the departure of the European elites. Based on tax returns, Atkinson notes that the top income shares in Malawi show a distinct decline in the period from 1964 to 1980. The share of the top 0.25 per cent went from 7.7 per cent in 1964 to 5.3 per cent in 1978-1980; the share of the top 0.1 per cent fell from 4.6 per cent to 3.6 per cent in 1978-1980 (p. 51). However, Pryor (1988) shows that during the same period, the sectoral and overall Gini rose substantially (table 12.1).

TABLE 12.1 Gini coefficients of the main economic sectors

	1968/69	1984/85
Smallholder families	.203	.453
Families on estates	.187	n.a.
Families in small towns	.466	n.a.
Families in four main cities	.660	.621
Total	.449	.599

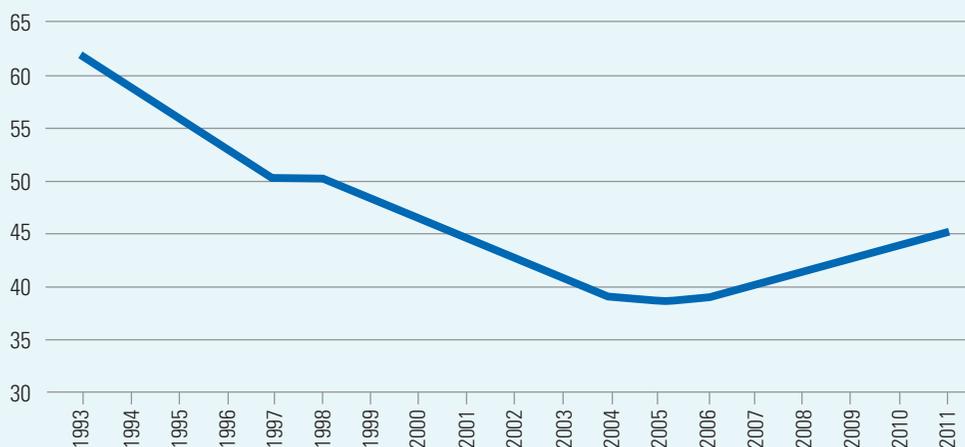
Source: Pryor (1988).

In view of the decline of maize output per capita of 1985-1991, the inequality rise documented by Pryor (1988) for 1964-1985 likely continued until at least 1991. This increase was due to, *inter alia*, the decline in net barter terms of trade recorded by the country until 1994⁵ and to the distributional impact of the Structural Adjustment Programmes (SAPs).

- (d) As regards the 1993-2011 period, figure 12.1 traces the dynamics of the Gini coefficient of the distribution of consumption per capita based on six household surveys. It shows that inequality declined until 2004-2005 (likely due to the introduction of the Starter Pack Programme over 1998-2005 and other factors discussed below), but that it then rose by six to seven Gini points between 2004/05 and 2011.
- (e) Finally, for 2004 and 2011, the microdata used were obtained from two standardised Integrated Household Surveys (IHS-2 and IHS-3) produced by the RIGA project carried out by the Food and Agriculture Organisation of the United Nations (FAO), the World Bank and American University (Washington, D.C.). A comparison of these two surveys suggests that the Gini coefficient of the distribution of household income per capita increased by 12.5 points, i.e., much more than the six to seven Gini points computed on the distribution of household consumption expenditure per capita in figure 12.1.

The following is a discussion of the factors that explain these long-term inequality trends, focusing in particular on the last 20 years. However, it must be noted that the above data on inequality are biased downward, since they are computed on surveys whose unit of analysis is the household (and not

⁵ In commodity-exporting economies, a worsening of the terms of trade generates a negative effect on tax returns, income level, balance of payments and the exchange rate. This causes a drop in households' purchasing power, a loss of employment, and a contraction in the supply of social services that affects the most low-income households.

FIGURE 12.1 Trend in the Gini coefficient (%) of consumption expenditure per capita

Source: Cornia and Martorano (2015).

the individual). This assumes that all family incomes are shared equally among household members, with no discrimination by age and gender. Clearly, this is not true, since in Malawi, inequality among individuals is also higher than among households, including because of cultural norms that discriminate against women in access to land, health, education, labour market, and political and social life. However, time series on inequality among individuals or between genders are very difficult to obtain. Thus, gender inequality can be measured indirectly on administrative statistics and rare ad hoc surveys or by disaggregating the results of income/consumption surveys in male- and female-headed households. In this regard, table 12.2 shows that Malawian women live longer than men, that the discrimination in access to health and education gradually declined (possibly because of the

TABLE 12.2 Female/male ratio for economic and social indicators

	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2010-2015
Female/male (F/M) life expectancy at birth	1.06	1.06	1.04	1.02	1.00	1.03	1.04
F/M access to anti-retrovirals	...	...	...	...	...	1.29	1.33
F/M secondary enrolment	0.42	0.52	0.61	0.69	0.78	0.84	0.91
F/M years of education of workers ^{3/}	0.50	0.41	0.48	0.50	0.51	0.56	0.66
F/M-headed land owned	...	...	...	...	0.881 ¹	...	0.852 ²
F/M-headed income p.c.	...	...	...	...	0.791 ¹	...	0.702 ²

Source: Authors' compilation based on UN DESA, Population Division (2015), WDI and the RIGA surveys for 2004 and 2011.

Note: ¹Refers to 2004; ²Refers to 2011; ³Data on years of education are from Barro and Lee (2013) and refer to the first year of the period considered; p.c. = per capita.

emphasis placed by the MDG on reducing gender bias) and that economic discrimination (measured by the land owned and income per capita) also declined.

Rural/urban inequality worsened during the 2000s as the ratio of rural to urban income per capita fell from 0.56 to 0.37 over 2004–2011. Similarly, a decomposition of the increase in the Gini coefficient shows that it rose from 0.45 to 0.59 over 2004–2011. This is also explained by a rise in urban–rural inequality. In contrast, there were no significant changes in regional inequality. In view of the data limitations mentioned above, the following focuses only on income and consumption inequality.

12.3 Independence and the adoption of an agriculture-led development model

12.3.1 Choice of the development model

At independence, 87.0 per cent of non-estate land was communally owned and only 3.0 per cent of non-estate land was privately owned. The number of African estate owners was small. However, their number rose when the estates were transferred to local elites with links to the Banda regime (Kwengwere, 2011). The rate of urbanisation was very low and increased only from 6.0 to 9.0 per cent between 1968/69 and 1984/85. As suggested by the Kuznets curve, urban migration increased inequality, because rural wages were 22–29 per cent of urban wages (Pryor, 1988).

At independence, the country adopted a development strategy based on the export of cash crops and migrant remittances. Smallholders were assigned the task of producing maize and some cash crops and supplying cheap labour to the estates. Given the egalitarian distribution of non-estate land, such a policy had potentially equalising effects. However, this was weakened by an almost continuous decline of the international terms of trade (figure 12.2) owing to the collapse of tobacco prices and

FIGURE 12.2 Evolution of the net barter terms of trade index, 1967–2013 (1982=100)



Source: Authors' compilation on Pryor (2008) for 1967–1985 and World Development Indicators for the subsequent years.

rise of oil and fertilizers prices (Pryor, 1988) that affected tax revenue, wages, employment and the distribution of income. In subsequent years, the terms of trade stabilised but did not increase even during the rapid growth of resource-poor China.

12.3.2. Structure of the agricultural sector

Food production is dominated by the subsistence farming of maize and tubers. Only 10.0 per cent of households use irrigation and, for most of them, food output is vulnerable to changes in rainfall and soil degradation. Although land concentration was, and still is, not very high,⁶ smallholders' income, their ability to increase output, food security and poverty correlate closely with farm size. Only households with more than 0.8-1.0 hectares can produce enough maize, raise a sufficient number of head of cattle and obtain credit for agricultural inputs. However, due to rapid population growth, the proportion of smallholders with less than 0.8 hectares rose from 28.7 per cent in 1968/69 to 55.0 per cent in 1980/81 and continued rising in the subsequent years.

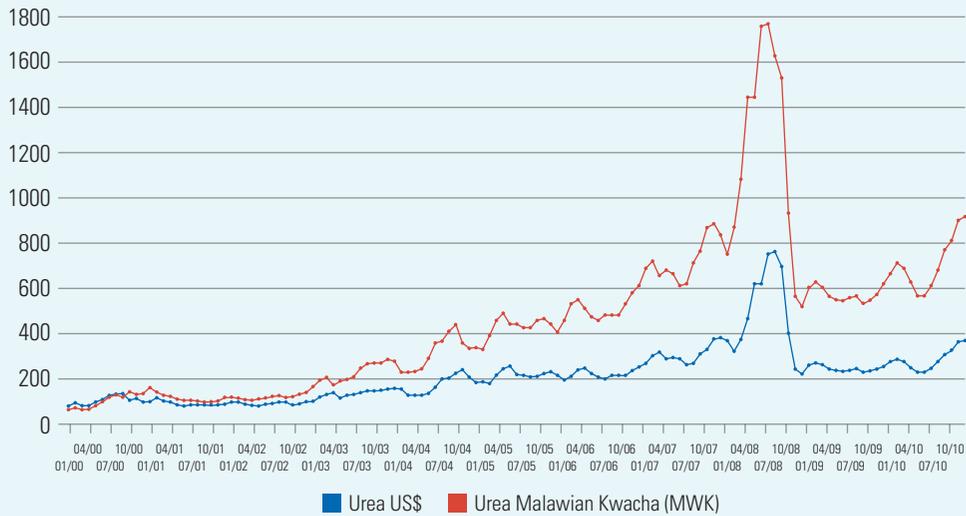
Growing land scarcity led to a further proletarianisation and informalisation of labour. This trend was exacerbated by the intermittent exclusion of small-scale farmers from access to fertilizer, credit and subsidies. All this affected their ability to respond to the price stimuli introduced by the SAPs of the 1980s (Lele, 1990). Agricultural output and inequality were, and still are, affected by changes in the price of imported fertilizers and pesticides. In particular, dependence on imported fertilizers, whose prices are closely linked to energy prices, makes the country vulnerable to changes in world oil prices. A rise in the latter increases production costs and can cause a drop in fertilizer demand. This, in turn, translates into lower maize production, higher maize prices and lower food security or in a shift into crops that require little fertilization, such as roots and tubers. At the beginning of the 2000s, the Starter Pack Programme, combined with favourable weather, contributed to bumper harvests in three consecutive years. The subsequent rise of the world oil price – a basic input for the production of urea – and the kwacha devaluation of 2008 caused a 250 per cent rise in the domestic prices of fertilizers (figure 12.3), which contributed to the famine of 2009-2010. This was due to the increasing production cost of agricultural commodities, which may have influenced the production of agricultural commodities, as suggested by Cornia, Deotti and Sassi (2016).

12.3.3 The impact of agricultural policies on inequality

Consistent with the choice of an agricultural export-led development model, in the early years, the Government assigned a large share of public investments to create rural infrastructure and intensify fertilizer use in the low-fertility central and southern regions. This policy generated some initial increase in agricultural output (figure 12.4). However, agricultural policies changed over time. In the early years, public support focused on smallholders. Nearly all investments and subsidies were assigned to projects benefitting them, generating an equalising effect. However, the maize and tobacco output of smallholders fluctuated widely, raising doubts in government circles about their ability to promote growth, ensure food security and generate sufficient revenue for key infrastructural projects. For this reason, starting in the late 1960s, the Government switched to an estate and medium-scale farmers' strategy. It reallocated land leases, production licences, subsidized credit and fertilizers to estates and

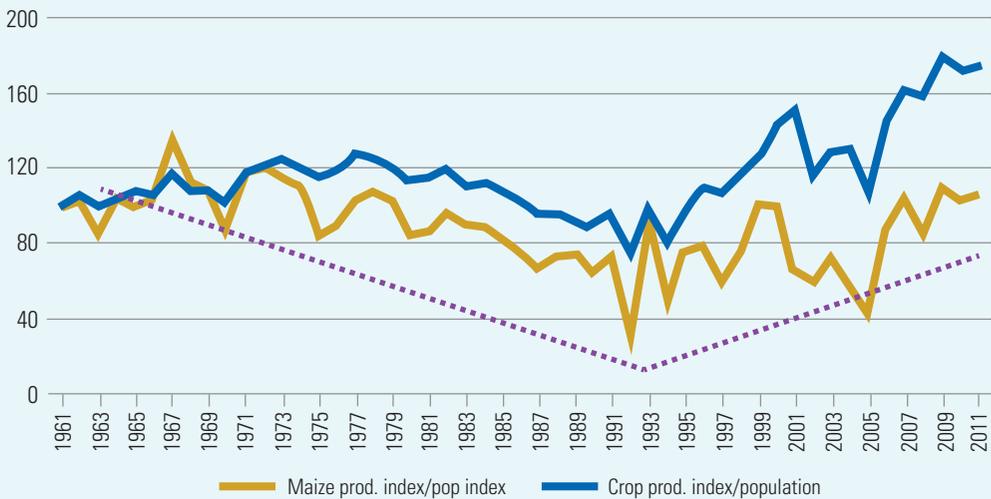
⁶The Gini coefficient of the distribution of planted land per smallholder household rose from 0.369 to 0.381 between 1968/69 and 1984/85 (Pryor, 1988, Table A5). If estate land were included, the Gini coefficient would rise to around 0.5.

FIGURE 12.3 Trend in urea price in dollars and Malawian Kwacha



Source: Cornia, Deotti and Sassi (2012).

FIGURE 12.4 Index of maize and cash crops production per capita (1961 = 100)



Source: Authors' elaboration on FAOSTAT.

medium-size farmers with the capacity to absorb new farming techniques, raise yields and introduce new cultures. While this shift generated rapid growth for 10-15 years, its impact was unequalising (Pryor, 1988) as land, labour and profits were squeezed out of the smallholders' sector, while rural wages declined.

These policies exacerbated what Lele (1990) called the dualism within the dualism, i.e., the dualism between small- versus medium-scale farmers in the context of the colonial-era dualism between estates and smallholders. Following this policy shift, the composition of agricultural output changed. While the country experienced a rapid growth of cash crops starting in the 1970s, maize production per capita declined (as suggested by the faster drop in the maize production index in figure 12.4), smallholders became more dependent on wage income and maize prices rose. This depressed the purchasing power of marginal smallholders who are net food buyers and pay higher maize prices than better-off families (Mussa, 2015).

The SAPs introduced in the 1980s further skewed access to fertilizers. These programmes sought primarily to re-establish macroeconomic balance after the exogenous shocks that hit Malawi in the late 1970s and 1980s, but later on also included price and trade liberalisation and an attempt to end fertilizer subsidies. The efficacy of these policies has been challenged often. In countries such as Malawi, characterised by high population density, declining farm size, high cost of imported fertilizers, skewed access to credit, weak extension services and narrow markets, a private sector-led agricultural intensification has little chance to succeed and is, by definition, unequalising. This is why the Government introduced the innovative Starter Pack Programme in 1998. The programme provided a free small pack of high-yielding maize and legumes seeds and enough fertilizer for 0.1 hectares (Levy, Barahona and Chinsinga, 2004). In the first three years, nearly three million packs were distributed, enough for all smallholders. In 2000–2001 and 2001–2002, the Starter Pack Programme was scaled down and targeted the poorest smallholders. In 2002–2003 and the following year, the programme was expanded to near-universal coverage in response to the food crisis of early 2002. Despite considerable year-to-year fluctuations, over 1998–2005, this programme reversed the decline of maize production per capita of 1981–1991 and helped reduce inequality over 1993–2005 (figure 12.1). Impact evaluations showed that the Starter Pack raised maize production by about 125–150 kg per household and kept maize prices low during the lean season. At the aggregate level, in the programme's initial years, maize production was 67.0 per cent higher than the average of the prior 20 years (World Bank, n.d.).

The approach to fertilizers, subsidies and agricultural intensification changed again in 2005/06 with the introduction of the Farm Input Subsidy Programme (FISP). FISP is credited with the recent decline of Malawi's food insecurity and became the Government's instrument of choice to reach low-income farmers. Except for 2008/09, FISP accounted for the quasi-totality of social expenditure (World Bank, 2013). However, its impact on inequality and poverty was unsatisfactory (see below).

Agricultural policies are implemented by the Agricultural Development and Marketing Corporation (ADMARC), a parastatal created in 1971. ADMARC's task is to complement the reach of private markets, promote agricultural exports, commercialize agricultural inputs, act as a buyer of last resort, regulate prices, maintain a strategic maize reserve and ensure food security through domestic and foreign purchases of maize. ADMARC's food security policies have often been criticized. While the organisation prevented a famine in 1998, in 2000–2001 its financial problems forced it to sell much of its maize reserves just before the poor harvest of 2002, a decision that caused food shortages and a famine (Hartwig and Grimm, 2002). In 2002, the World Bank forced ADMARC to reduce its trading operations to allow greater private sector competition, but these measures also generated mixed results. Weather shocks in Malawi and ADMARC's inappropriate interventions in the maize market (e.g. rationing of maize sales) resulted in food price spikes in 2002, 2005 and 2009–2010 (Cornia, Deotti and Sassi, 2012) that affected the distribution of purchasing power (Dorward and Chirwa, 2011; Chirwa and Muhome-Matita, 2013).

12.4 Population growth⁷

With the policy changes discussed in Section 12.3, formal employment in the estate sector first rose markedly but then stagnated due to the exhaustion of fertile land and the inability to create substitute on-farm employment opportunities. Population growth (table 12.3) and limited technological intensification eventually pushed the country's agriculture to its land frontier and to a decline in farm size that reached 0.23 hectares in 2009, or lower values in the densely populated South. Falling farm size and soil fertility have become an obstacle to the production of enough food for self-consumption, even in good years, and have increased household dependence on falling unskilled wages and other non-farm sources of income, including rural non-agricultural activities (RNAA) (Droppelman, Mukuwira and Khumwenda, 2012) and some rural-urban migration (table 12.3).

TABLE 12.3 Malawi's population dynamics, 1980-2010

	1965-1970	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Total fertility rate (TFR)	7.20	7.58	7.40	6.60	6.44	6.07	5.83
Population growth rate	2.39	3.05	5.20	1.06	2.55	2.64	2.99
Total population (million) *	4.5	7.2	9.4	10.1	11.3	12.9	15.0
Population per km ² *	38.2	61.3	79.7	84.1	95.6	109.1	126.7
% Urban population *	6.1	10.2	11.6	13.3	14.6	15.1	15.5
Urban population (million)	.274	1.09	1.32	1.65	1.94	2.33	2.81

Source: Authors' compilation from UN DESA, Population Division (2015).

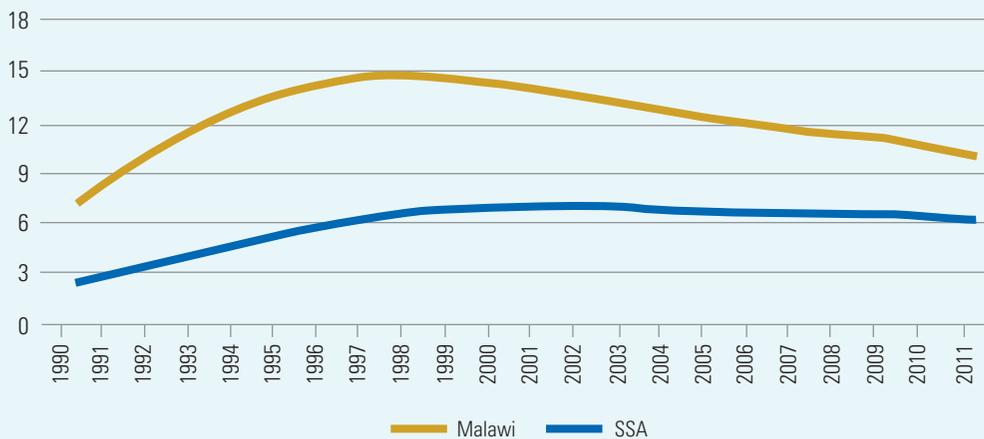
Note: * end of period.

High population growth affected not only average farm size and soil exhaustion, but also overuse of biomass and deforestation, as around 98.0 per cent of the population depend on firewood as a source of energy for cooking. These trends are unsustainable and have already led to a drop in agricultural productivity that affected smallholders in particular. While improved farming techniques and greater fertilizer use may provide some relief to declining land productivity, greater fertilizer use may, in turn, affect the quality of the water table. All this suggests that the solution to this environmental problem must come mainly from population control policies focusing on a faster decline of the TFR. Indeed, since the 1970s, the population growth rate has oscillated around 3.0 per cent, except for the drop in the 1990s due to the rise of AIDS-related deaths (figure 12.5). While this temporarily reduced pressure on land, HIV/AIDS generated perverse distributive effects because it impoverished AIDS-affected families by reducing their number of working adults, increasing the time allocated by healthy adults to the care of HIV patients and raising drug and funeral costs (Cornia, 2007). Over the last 15 years, some progress was recorded as a result of the widespread delivery of antiretroviral therapy (ART),⁸ palliative care and consciousness-raising programmes.

⁷ Chapter 10 provides a detailed review and empirical evidence on the relationship between population dynamics and inequality in Africa.

⁸ Initially, anti-retroviral (ARV) drugs were provided only by hospitals. Nowadays, they are also provided by health centres and nurses. Thus, over 2011-2013, the coverage of ARV doubled from 300 to more than 600 sites. The percentage of HIV-positive pregnant women covered by anti-retroviral therapy (ARV) increased from 44 per cent in 2010 to 73 per cent in 2013 (Government of Malawi, 2014).

FIGURE 12.5 Prevalence of HIV/AIDS in the 15-45 age group



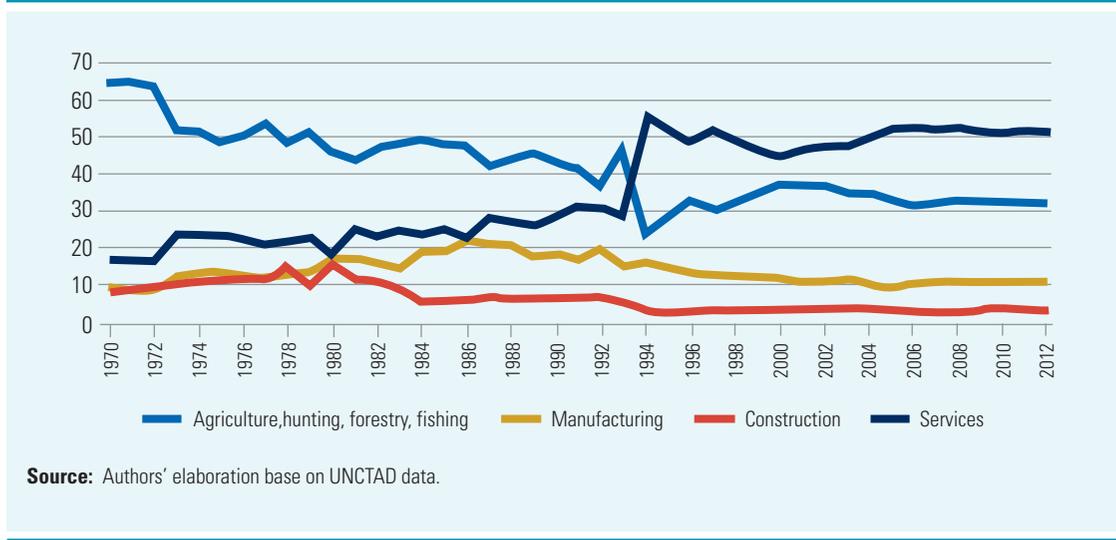
Source: Authors' elaboration from World Development Indicators.

Finally, population pressure on the land also rose because of the vanishing opportunity to migrate. During the colonial era, landless workers unable to find work in the estates migrated to Southern Africa. This trend continued after independence and by 1972, 10.3 per cent of the labour force worked abroad (Kwengwere, 2011). However, migration declined starting in the mid-1970s because Malawi began withdrawing its workers following a plane crash that killed many miners. In addition, Malawian expatriates began to be deported after xenophobia rose in South Africa. The crude net migration rate fell from 18.8 per cent over 1985–1990 to 1.5 per cent in 2005–2010 (UN DESA, Population Division and UNICEF, 2014). Yet, at the same time, the number of emigrants with tertiary education surged (World Bank, 2011). Overall, between 2002 and 2011, migrant remittances ranged between 0.1 and 0.8 per cent of GDP.

Due to these changes in population growth, farm size, emigration, rural-urban migration and sectoral income growth, the sectoral composition of Malawi's GDP shifted from agriculture towards RNAA and urban-based activities, particularly services. Between 1992 and 2012, the value added share of agriculture fell from 50.0 to nearly 30.0 per cent (figure 12.6) while the value added share of industry (mining, manufacturing, construction and utilities) fell from 20.0 to 10.0 per cent, stabilising in subsequent years. Key factors in this decline were low domestic and foreign investment, trade liberalisation and, towards the end of the 2000s, an overvalued exchange rate. As in other African countries, domestic manufacturing output was displaced by Chinese and Indian imports (AfDB et al., 2011). Construction also declined. By contrast, the value added share of services rose, reaching a value of around 50.0 per cent in 2012 (figure 12.6). Finance, communication and private and government services recorded the largest expansion (Charman, 2013 and figure 12.6).

In addition, rapid population growth led to a shift to urban informal activities such as microenterprises, petty trade, personal services and unregulated trading (Durevall and Mussa, 2010). However, due to limited job creation in urban areas, the redundant rural labour often found jobs in RNAA. Droppelman,

FIGURE 12.6 Evolution of the shares of value added in the main sectors, 1970-2012



Source: Authors' elaboration base on UNCTAD data.

Mukuwira and Khumwenda (2012) show that over 2004-2009, 40 per cent of construction jobs, 20 per cent of manufacturing jobs and one-sixth of service jobs were located in rural areas.

The rise of informal services was, however, problematic. Most formal services jobs are in government and finance. In contrast, the informal sector has low labour productivity and, in many cases, represents a source of livelihood rather than of productive employment. In addition, the distribution of income in formal and informal urban services is more unequal than in smallholders' agriculture, labour-intensive manufacturing and construction. This 'suboptimal evolution of the structure of production' affected growth (as workers seldom moved from low to high productivity jobs), while income distribution worsened. Indeed, the informal sector exhibits a more skewed income distribution due to unequal access to assets, human capital, credit and inputs. At the same time, inequality also rose within the formal sector, as shown in the next section.

12.5 Testing the 'suboptimal structural transition hypothesis' through micro-decomposition

To empirically measure the distributive impact of the reallocation of labour and output across sectors, the authors carried out a micro-decomposition⁹ of the changes over 2004-2011 in the overall Gini coefficient of the distribution of household income per capita, computed on HIS2 and HIS3. To do

⁹There is extensive literature on the decomposition of the Gini coefficient at one point in time or of its change over time. Slightly different results may be obtained depending on the methodology followed, particularly in the case of specific distributions of income sources or population subgroups. Results also depend on whether the Gini is decomposed by 'production sectors' (as in table 12.4) or 'income sources' (as in table 12.5), especially if the number of subgroups is high and if zero observations are removed or not from the distributions of the subgroups. The initial method proposed is that of Rao (1969), discussed in the text. Lerman and Yitzhaki (1985) proposed another approach, which takes into account that the ordering of the distribution of total income may differ from that of the subgroups. These authors developed the following formula: $G = \sum R_k G_k S_k$, by which the total Gini G is equal to the weighted sum of the sectoral Gini G_k weighted with the respective income shares in total income S_k , multiplied by R_k , which is the correlation between the Gini of the income component k and that of total income. Wan (2001) proposed a dynamic approach, in which $\Delta Gini$ is equal to $\sum \Delta s_i C_i + \sum \Delta C_i s_i + \sum \Delta s_i \Delta C_i$. The first term represents the 'structural effect' (i.e., the change in total Gini due to changes in the shares s_i of income sources or population subgroups), the second is the 'real inequality effect' (reflecting the changes of concentration coefficients in each sector or income source) and the third is an 'interaction term' between the first two.

so, the authors followed the Rao (1969) approach, which, after eliminating from the surveys all zero observations, decomposes the overall Gini coefficient G_t into the weighted sum of the concentration coefficients C_{it} of each sector weighted by their shares s_{it} in total value added, i.e.:

$$G_t = \sum s_{it} C_{it} \quad \text{with} \quad \sum s_{it} = 1$$

This algorithm makes it possible to identify the absolute and relative contributions of each sector's concentration coefficient and value added share to overall inequality. By comparing the changes in relative contributions between 2004 and 2011 (last column of table 12.4), the sectors that explain the increase of the overall Gini coefficient can be observed. Given some methodological issues (see footnote 7) and to test the robustness of the results obtained with the Rao methodology, we also used the Distributive Analysis Stata Package (DASP) (Abdelkrim and Duclos, 2007), in which the zero values are included in the distributions of the subgroups, as well as the Yitzhaki-Lerman (1985) approach. As shown in Annex 1 of Cornia and Martorano (2016), the results of the different approaches are very similar to those presented below.

Table 12.4 shows that between 2004 and 2011, the overall Gini increased by a sizeable 12.5 points (i.e., more than the 6.0-7.0 points shown in figure 12.1, which is based on the distribution of household consumption per capita) and that this increase was due to:

- A large 'structural effect', i.e., a shift in economic activity and value added creation from low-inequality agriculture, which experienced a decline of 19.2 percentage points in its value added share, to high-inequality sectors (e.g. commerce, transport and telecommunication, services and construction). Mining, manufacturing, utilities and finance, insurance and real estate (FIRE) recorded modest variations (table 12.4, figure 12.6); and

TABLE 12.4 Rao decomposition of the increase in the Gini coefficient between 2004 and 2011

Value added by sector	2004				2011				ΔRelative contribution 2004-2011
	Income share	Concentration index	Absolute contribution	Relative contribution	Income share	Concentration index	Absolute contribution	Relative contribution	
Agriculture	0.648	0.312	0.202	0.449	0.456	0.277	0.126	0.220	- 0.229
Mining	0.000	0.491	0.000	0.000	0.004	0.812	0.003	0.005	0.005
Manufacturing	0.069	0.608	0.042	0.093	0.075	0.719	0.054	0.094	0.001
Utilities	0.006	0.692	0.004	0.009	0.005	0.875	0.004	0.007	- 0.002
Construction	0.010	0.541	0.006	0.013	0.025	0.733	0.018	0.032	0.019
Commerce	0.084	0.615	0.052	0.115	0.152	0.809	0.123	0.214	0.099
Transport	0.018	0.775	0.014	0.031	0.043	0.885	0.038	0.067	0.036
Finance, Insurance and Real Estate (FIRE)	0.013	0.924	0.012	0.027	0.018	0.920	0.016	0.029	0.002
Services	0.137	0.787	0.107	0.239	0.227	0.833	0.189	0.330	0.091
Other sectors	0.015	0.713	0.010	0.023	0.002	0.714	0.002	0.003	-0.020
Total	1.000		0.450	1.000	1.000		0.575	1.000	0.000

Source: Authors' elaboration on HIS2 and HIS3.

- A near universal and sizeable ‘real inequality effect’, i.e., an increase in the concentration coefficients of the distribution of income in all sectors except agriculture, FIRE and other sectors.

As a whole, the increase in overall Gini was driven by the decline of the value added share and concentration coefficient of agriculture and the parallel increase in the share and concentration coefficient of commerce, transport, services and, to a lesser extent, construction. All other sectors affected overall inequality only marginally.

These results validate the hypothesis of ‘suboptimal structural evolution’ of the economy over the last seven years, caused by the inability to generate a broad-based modernisation of agriculture and by the decline and subsequent stagnation of the share of labour-intensive construction and manufacturing, due to premature trade liberalisation, infrastructural deficits and low savings.

The overall rise of the Gini coefficient over 2004–2011 was also decomposed by income source, in this case also following the Rao (1969) approach. The results (table 12.5) are consistent with those of table 12.4. They show, in order of importance, the following:

- The key factor in the Gini rise was the 4.5-point increase of the income share of livestock production and, even more significantly, the massive worsening of its inequality (its Gini rose from 0.400 to 0.716). In a dualistic economic framework, this seems to suggest that with a near exhaustion of farmable land in the south and centre, better capitalized farmers and estates shifted to land-saving but capital-intensive livestock production, with less of a shift by small-scale farmers with no access to credit or technical assistance.
- A second driver of the inequality increase was the shift of value added creation from agricultural and self-produced incomes to informal incomes in non-farm urban and peri-urban areas, where income inequality is higher due to skewed access to assets, credit and technology. This shift from low-inequality wage employment in agriculture and smallholders’ production (whose share dropped by no less than 18.9 percentage points between 2004 and 2011, table 12.5) to high-inequality income sources had a large unequalising impact.
- Non-farm formal sector wages became more unequally distributed, while their share of total income increased by 8 points, reflecting a shift towards urban and peri-urban jobs in services, transport, commerce and, to a lesser extent, manufacturing and FIRE, i.e., sectors where the introduction of modern technologies raised the demand for skills and the skill premium. The latter rose also because of the limited increase in the supply of workers with secondary education, particularly those in the bottom 80.0 per cent of the income distribution (see below).
- Capital incomes (rental and other unspecified incomes) contributed, in part, to the increase in overall income inequality, as their share increased by 1.8 points and their concentration coefficient rose from 0.439 to 0.778.
- The decomposition underscores the limited impact of public and private transfers in redistributing income to the poor, despite the introduction of social assistance programmes discussed in Section 5.3. Many such social programmes are at the pilot stage and are scattered across many activities. They have not yet generated the impact observed in high-coverage programmes, such as Brazil’s Bolsa Familia that reduced the overall Gini coefficient by three points (Cornia, 2014).

TABLE 12.5 Decomposition of the rise of the Gini index, by type of income, 2004-2011

Value added by sector	2004				2011				Δ Relative contribution 2004-2011
	Shares	Concentration index	Absolute contribution	Relative contribution	Shares	Concentration index	Absolute contribution	Relative contribution	
Wage employment – agriculture and fishing	0.081	0.279	0.023	0.052	0.088	0.272	0.024	0.041	-0.011
Wage employment – non-farm activities	0.224	0.755	0.169	0.387	0.305	0.814	0.249	0.423	0.036
Annual net income from crop production	0.437	0.286	0.125	0.286	0.248	0.236	0.059	0.100	-0.186
Annual net income from livestock production	0.097	0.400	0.039	0.089	0.142	0.716	0.102	0.173	0.084
Annual net non-farm, self-employment income	0.122	0.592	0.072	0.166	0.166	0.785	0.131	0.223	0.057
Annual gross total Public-private transfers	0.034	0.189	0.006	0.015	0.025	0.186	0.005	0.008	-0.006
Annual income from other sources (rental income, non-labour sources)	0.006	0.439	0.002	0.006	0.024	0.778	0.019	0.032	0.026
Total	1.000		0.436	1.000	1.000		0.587	1.000	

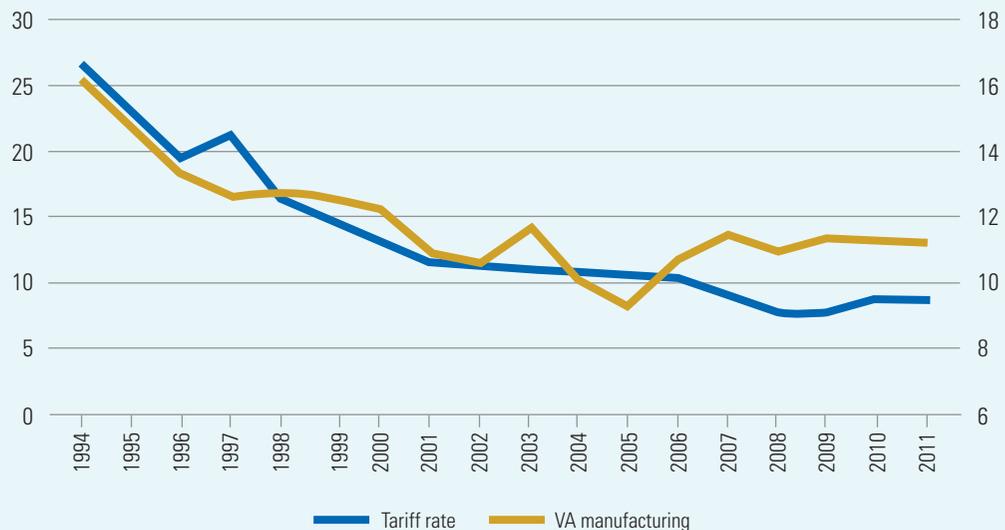
Source: Authors' elaboration on the 2004 and 2011 standardised RIGA household surveys.

12.6 Impact of economic policies on inequality

12.6.1 Trade liberalisation, economic structure and income inequality

As noted, due to the macroeconomic shocks and world recession of the early 1980s, Malawi adopted three SAPs during the period 1981-1988. Their initial emphasis was on macroeconomic stabilisation, but the focus of SAPs gradually shifted towards liberalising agriculture, promoting agricultural exports, removing fertilizer subsidies, adjusting exchange and interest rates periodically and privatising state-owned companies. In turn, the 1987 Enhanced Structural Adjustment Facility (ESAF) included a reduction in export licensing and import tariffs and, in 1994, a relaxation of exchange controls (Kwengwere, 2011).

Manufacturing was never a mainstay of the Malawian economy, as firms did not create enough backward linkages with agriculture. As a result, the country continued to depend on imports of even basic agro-processed goods, thereby forgoing its potential in agri-business and textiles. The problems of manufacturing were exacerbated by the trade liberalisation of the 1990s. Instead of nurturing infant industries, the SAPs required a reduction of import tariffs that caused a dramatic decline in the share of manufacturing in total output (figure 12.7) and an influx of goods from China and India (table 12.6). Yet, in the late 2000s, Chinese and Indian FDI directed to manufacturing, agriculture and the pharmaceutical sector rose, which may resurrect the Malawian industry in the future (Said and Singini, 2014; AfDB et al., 2011).

FIGURE 12.7 Trends in average tariff rate and manufacturing value added share, 1994-2011

Source: Authors' elaboration on WDI data.

Note: VA = value added.

12.6.2 Macroeconomic policies and the crisis of 2009-2011

Over 2006-2009, GDP growth of 6.0 per cent a year was recorded, as well as steady donor support and a stable economy (table 12.6). Tax reform increased revenue collection slightly and improved the fiscal stance. In 2006, the country also benefitted from massive debt relief (see below) and a steady inflow of foreign grants.

This favourable performance was interrupted in 2009 by a large increase in fertilizer prices (figure 12.3), the importation of large quantities of maize, an increase in electoral-cycle expenditures by 1.2 per cent of GDP and a decline of FDI (table 12.6) and remittances. These factors aggravated the fiscal deficit (AfDB et al., 2011; Said and Singini, 2014). In addition, a policy of a fixed exchange rate used as a 'nominal anchor' against inflation worsened a chronic current account deficit, which led to an acute foreign exchange crisis in 2001.

The 2010-2011 macroeconomic crisis triggered a major recession while inflation accelerated, poverty rose by ten points, labour absorption declined (Beck, Mussa and Pauw, 2013) and inequality rose, including due to a fast increase in food prices (Mussa, 2015). Indeed, the 2009-2011 crisis was accompanied by a large increase in the price of maize, which led to emergency food imports and a large increase in child malnutrition (Cornia, Deotti and Sassi, 2016). Unlike in other famines, the 2009-2010 food crisis occurred in a context of increasing maize production. However, the Ministry of Agriculture and ADMARC promoted a maize export drive during 2007-2009 because of the systematic overestimation of maize output. Domestic speculation following high world food prices (Chirwa, 2009), inflationary pressures, devaluation and the increase in urea cost contributed to the food price rise and related inequality increase.

TABLE 12.6 Main macroeconomic indicators, early 1990s-2012

	Early 1990s	Mid- 1990s	Early 2000s	2005	2006	2007	2008	2009	2010	2011	2012
GDP per capita growth rate	4.0	3.1	-3.3	0.5	-0.8	6.5	5.4	6.0	3.6	1.4	-1.0
Total investment/GDP	20.4	19.5	14.5	22.7	25.7	26.5	25.7	25.6	26.0	15.3	16.9
Gross national savings/GDP	15.1	5.5	7.6	10.7	14.4	27.4	16.0	20.7	30.4	9.4	12.5
Inflation, end-of-period CPI change	15.3	49.2	28.6	16.6	10.1	7.5	9.9	7.6	6.3	9.8	34.6
Exports of goods and services/GDP	23.5	27.6	24.8	24.0	22.6	28.3	28.2	24.6	29.4	29.5	37.6
Imports of goods and services/GDP	31.4	47.2	36.2	52.2	47.1	40.3	48.9	39.0	44.9	39.8	54.2
Foreign direct investment/GDP	0.0	1.1	0.9	5.1	1.1	3.4	4.6	1.0	1.8	2.3	3.1
Real effective exchange rate index (2005 = 100)	194.2	139.5	147.5	99.7	96.3	94.1	97.1	106.3	100.0	95.6	78.5

Source: IMF World Economic Outlook (WEO) and the World Development Indicators.

12.6.3 Fiscal policy and income redistribution

In Malawi, income redistribution in cash and kind has historically played a limited role. The main causes of such limited redistribution are low income per capita, difficulties in taxing agriculture and the informal sector, lack of redistributive institutions and problems of economic governance, which at times involved the diversion of public funds targeted at education, health and agriculture.¹⁰ Overall, the ‘corruption perception index’ (ranging between 0 (highly corrupt) and 10 (very clean)) fell from 4.1 in 2000 to 2.7 in 2007 (Teorell et al., 2015). In addition, Ndikumana and Boyce (2010) argue that between 1970 and 2004, capital flight totalled 133.0 per cent of Malawi’s 2004 GDP. This loss of resources led to a reduction of government spending on activities that, if properly implemented, have an equalising effect. Nevertheless, during the 2000s, the average tax/GDP ratio slightly exceeded the average for 18 SSA countries¹¹ (Cornia, 2015). This encouraging performance was due to the introduction of a semi-autonomous revenue authority and an electronic tax register. Indirect taxes represent the main source of revenue, while trade taxes decreased. The progressivity of these measures remains unexplored. For a detailed analysis of the relationship between fiscal policies, distribution and income inequality in Africa, see Chapter 7.

The country also benefitted from debt relief under the Heavily Indebted Poor Countries (HIPC) initiative. As a result, the external debt fell from 160 to 20.0 per cent of GDP and debt service payments fell from 4.7 to 1.9 per cent of GDP, thus freeing resources for domestic spending. Over the 2000s, official development assistance (ODA) remained stable at around 10–12 per cent of GDP (table 12.7). These changes generated greater fiscal space, which allowed the Government to increase spending on agriculture, education and social protection. However, poor management of this

¹⁰ Corruption problems came to the fore starting in the late 2000s. According to audits funded by the Department for International Development (DFID) in 2013, 8.0 billion kwacha was looted from the country’s public coffers. Subsequent investigations suggested that the looting had started in 2009. As a result, donors froze their support for health and education.

¹¹ Burkina Faso, Cameroon, Central Africa, Côte d’Ivoire, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Madagascar, Mali, Mauritania, Mozambique, Niger, Rwanda, Sierra Leone, Tanzania and Uganda.

TABLE 12.7 Trend in main government fiscal indicators, 2001-2012

	2001	2002	....	2006	2007	2008	2009	2010	2011	2012
Total revenue and grants	27.5	24.1	....	31.2	31.7	30.1	31.9	33.9	31.5	29.9
Tax revenue	17.0	15.3	....	15.6	16.6	17.6	16.5	18.8	17.9	17.5
Grants	9.1	6.9	....	13.7	13.6	10.9	13.8	11.7	10.9	9.6
Total expenditure	33.4	31.9	....	31.2	33	32.8	35.5	35	37.9	37.3
Current expenditure	22.7	24.6	....	24.4	21.3	21.1	26.7	24.7	26.4	25.5
<i>Excluding interest</i>	<i>18.0</i>	<i>19.4</i>	....	<i>19.7</i>	<i>17.8</i>	<i>18.9</i>	<i>24</i>	<i>22</i>	<i>24</i>	<i>23.5</i>
Wages and salaries	5.2	6.9	....	5.3	5.1	5.5	5.7	5.7	5.8	5.8
Goods and services	6.8	8.1	....	8.6	6.6	7.7	11.9	10.4	12	11.8
Interest	4.6	5.1	....	4.7	3.5	2.3	2.7	2.7	2.4	1.9
Capital expenditure	10.2	7.4	....	6.8	11.5	11.7	8.8	10.2	11.5	11.8
Primary deficit	-1.2	-2.8	....	4.7	2.2	-0.4	-0.8	1.5	-3.9	-5.4
Overall deficit	-5.8	-7.9	....	0.0	-1.3	-2.7	-3.6	-1.1	-6.3	-7.4

Source: Authors' compilation on AfDB et al. (2011).

additional spending led to a new widening of the fiscal deficit in 2011 (table 12.7). The inequality impact of public spending is discussed below:

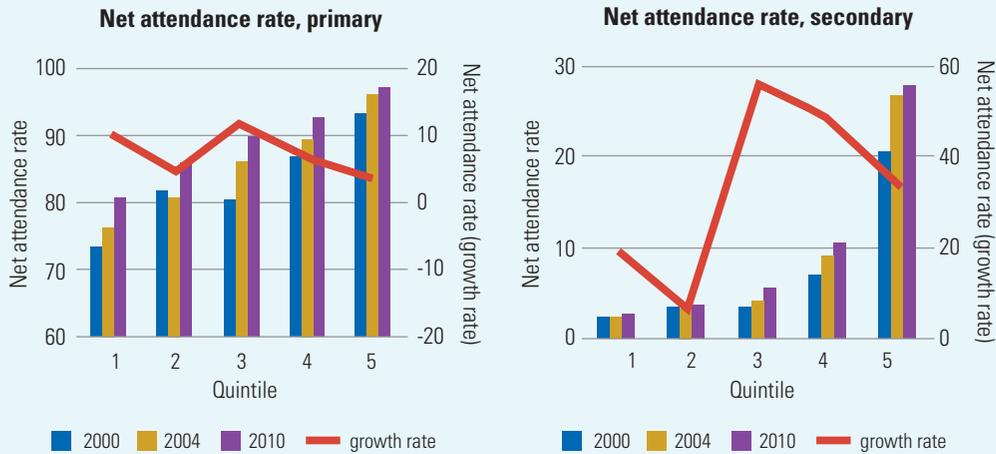
- **Education and health spending.** In Latin America, an increase in secondary enrolments among the children of the poor was a key driver of the decline in human capital inequality, skill premium and overall inequality (Cornia, 2014) during the 2000s. In Malawi, public spending on education as a share of GDP reached around 5.0 per cent by the late 2000s (World Bank's EDSTATS), a high value by SSA standards. Most of these funds were allocated to primary education, which registered a steady increase in net attendance rates, especially for the bottom three quintiles (figure 8, left panel). In contrast, spending on secondary education was substantially lower. With limited public funding, the attendance rate in secondary education remained between 10.0 and 20.0 per cent. In addition, the attendance rate of children of the bottom quintile was only 2.0 per cent, compared to 20.0 per cent of children of the top quintile (ibid). Furthermore, over 2000-2010, the growth in enrolment was lower in the first two quintiles than in the next three (figure 12.8, right panel). Last, attendance rates in tertiary education remained low and highly skewed in favour of the rich.

Data on the redistributive effect of public health spending are more limited because of its smaller size. In this regard, a World Bank (2013) study for 2011 suggests that the attendance rate at government health facilities is broadly proportional, while that at private institutions is skewed in favour of the upper two quintiles. An analysis of the redistributive effect of public health spending is recommended.

- **Agricultural subsidies.** Malawi spends more than most other SSA countries on agricultural subsidies. For instance, FISP absorbed 4.6 per cent of GDP in 2012/13 and covered 1.5–2 million people (Beck, Mussa and Pauw, 2013). Agricultural subsidies have traditionally been the instrument of choice to promote growth among small- and medium-scale farmers. They

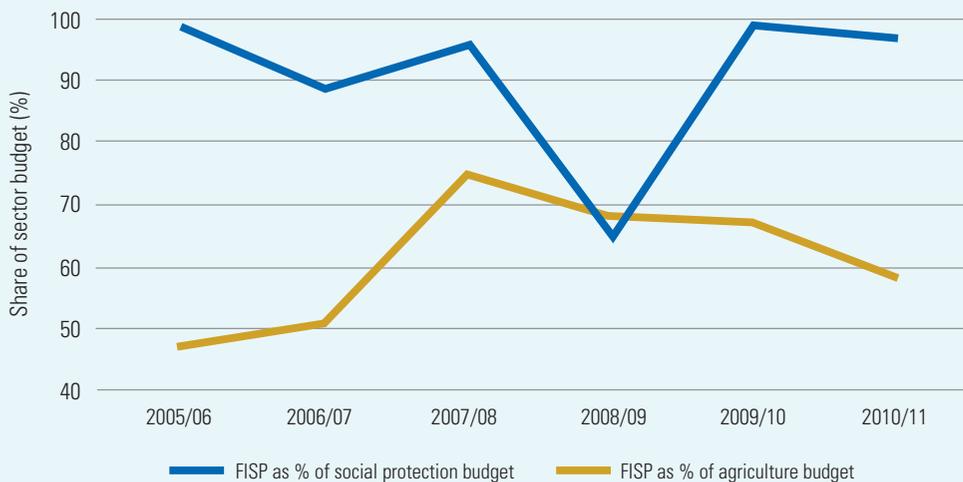
absorbed as many resources as all other social protection programmes taken together (figure 12.9). However, recent studies (Chirwa and Muhome-Matita, 2013; and Dorward and Chirwa, 2011) show that FISP was not able to address the problem of fertilizer affordability for the poorest smallholders and that the targeting process failed to reach the poorest strata.

FIGURE 12.8 Net attendance rate in primary education (left panel) and secondary education (right panel), by income quintiles, 2000, 2004 and 2010, and growth rates, 2000-2010



Source: Authors' elaboration on Demographic and Health Survey (DHS) data.

FIGURE 12.9 The Farm Input Subsidy Programme as a percentage of the social protection budget and the agriculture budget



Source: World Bank (2013).

- **Social transfers.** Traditionally, social transfers absorbed a modest share of the budget. However, the Government modernised the social protection system recently based on a broad consensus that FISP was insufficient to deal with the problem of poverty and inequality and that alternative measures needed to be implemented (AfDB, OECD and UNDP, 2014). As a result, in 2009, the Government launched the National Social Support Policy to improve living conditions among the poorest (Charman, 2013).

In this context, a Social Cash Transfer Scheme (SCTS) was introduced in 2006 in one district and later scaled up to 15 out of 28 (Galera Shaba, 2013). Its goal is to break the intergenerational transmission of poverty among the ultra-poor and labour-constrained households (table 12.8). The programme aims to raise school enrolment, reduce child labour and increase access to health services. To this end, the Government provides an unconditional cash transfer of US\$4-13 per month, depending on the number of eligible members. Moreover, a schooling attendance bonus is provided to children attending primary school (US\$1.30 per month) and secondary school (US\$2.60) (Covarrubias, Davis and Winters, 2012). According to recent evaluations, the program has a positive impact on productive expenditures (Boone, 2013). Other pro-poor schemes are listed in table 12.8. However, the most vulnerable groups do not benefit from these measures.

TABLE 12.8 Malawi social protection programmes and expenditures

Programme	No. of districts	Intended target group	Households	Persons	Benefit per household in kind or in Malawi kwacha (MWK)
Farm Input Subsidy Programme (FISP)	28	Poor household farming families	300 000	1 600 000	500 annually
School Feeding Programme	13	Primary school children		630 000	Daily
Social Cash Transfer Scheme (SCTS)	8	Ultra-poor, labour-constrained households	28 000	100 000	2 700 monthly
Income Generating Public Works Programme (now the Rural Infrastructure Development Programme)	15	Poor households/vulnerable persons	N/A	N/A	N/A
MASAF Public Works Programme	28	Poor with labour capacity	586 000	2 900 000	14 400 annually
Government Public Pension Scheme		Retirees	N/A	30 000	

Source: World Bank (2013).

12.7 Summary

The agricultural export-led development model adopted by the Banda regime favoured the estate sector and medium-sized farms, thereby exacerbating the inequality inherited from the colonial era. As regards 1985-1993, the cancellation of fertilizer subsidies requested by the SAPs contributed to a polarisation of agricultural production and a decline of maize output per capita until 1991-1993, while the unequalising effects of HIV/AIDS intensified. This was also exacerbated by unfavourable

trends in international terms of trade. A more detailed analysis of inequality dynamics during this period is, however, recommended.

The downward inequality trend that began in 1993 seems to be related to the decline in HIV/AIDS incidence, the adoption of the Starter Pack Programme over 1998-2005 and the stabilisation of international terms of trade. This period also witnessed the beginning of a structural transformation of production that partially offset the decline of inequality. Here, too, additional research is needed to precisely identify the relation between the main variables.

Finally, the 2004-2011 rise in inequality was due to a suboptimal structural transition of the economy from low-inequality crop agriculture to high-inequality sectors, such as livestock production, commerce, transport, and formal and informal services located in urban and rural areas. Such transformation was due, in part, to the decline in manufacturing induced by trade liberalisation and the skewed distribution of incomes from livestock production. Despite the increasing fiscal space made possible by the HIPC initiative and efforts at raising revenue, the potentially equalising impact of public spending was hampered by lack of redistributive institutions and, in some cases, corruption. Since 2005, redistribution pivoted around the FISP, which, as noted, is not progressive, while the new Social Cash Transfer Scheme is well-targeted but had limited coverage. In addition, the limited increase in the number of workers with secondary education among the poor caused an undersupply of skilled workers and raised skill premium. This picture needs to be integrated with an analysis of tax incidence.

As regards policy recommendations, only a few priorities are emphasised here. First, the transition to a modern, input-intensive and environmentally sustainable agriculture is still unaccomplished. The Starter Pack Programme offers some indication on how to promote a Green Revolution in Malawi, although it should be integrated with measures aimed at reducing its environmental impact. Rural credit and technical assistance to extend land-saving and capital-intensive livestock production widely are also necessary.

A more rapid decline in population growth is also unavoidable and should become a policy priority. In poor developing countries such as Ethiopia and Bangladesh, this objective was achieved through state- and community-based promotion of responsible motherhood, supported by revised legal norms on the age of marriage and gender discrimination, distribution of contraceptives and the creation of a nascent state-financed, low-cost social safety net to reduce the need to have many children. A slowdown in population growth is also necessary when considering that the country has reached its land frontier and that employment in RNAA and manufacturing is hampered by low savings, high transport costs and a limited supply of workers with secondary education. In all these areas, public policy should consider introducing changes to increase investments (including by encouraging FDI and controlling capital flights), improve secondary school enrolment among the children of the poor, support small and medium-sized enterprises and the urban informal sector and reassess the policy of trade liberalisation by introducing World Trade Organisation (WTO)-compatible industrial policies.

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