

Lesotho's Demographic Dividend

in the Context of Health and
Other Development Challenges

SUMMARY REPORT





Foreword

The Government of Lesotho is committed to promoting inclusive and sustainable economic growth in fulfilment of the 2030 global Agenda for Sustainable Development, the African Union Agenda 2063 and other regional and national targets. To achieve its development aspirations spelled out in the Second National Strategic Development Plan (NSDP 2), the country recognizes the opportunities for transformational investments in its population to achieve the demographic dividend, which is an economic boost influenced by the existence of a higher proportion of the working age population relative to young dependents.

This report on *Lesotho's Demographic Dividend in the Context of Health and Other Development Challenges* unpacks the country's demographic dividend based on past and projected changes in the population age structure and other mega trends in the local, regional and global environment.

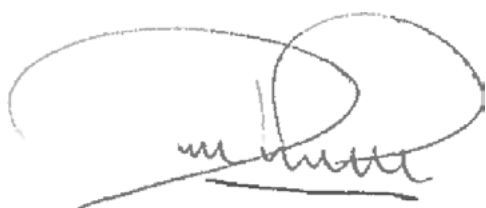
Lesotho is experiencing a rapid change in its population structure. The youthful population of 795,000 people aged 15 to 35 years, constituting more than a third (40 per cent) of the total population, presents a tremendous potential for building a generation that contributes to Lesotho's development through a skilled workforce, savings and investments. While the population is relatively young, a significant percentage of the population is entering the old age (65 years or more) category. An estimated 123,000 people (6 per cent of the total population) are aged 65 years and above. This will create an increased demand for social protection and care services. With these demographic changes in mind and their intersection with economic growth and sustainable development, this report provides a valuable resource that aids in the understanding of resource flows across generations and the factors that can boost or constrain the demographic dividend.

The government recognizes that the realization of the demographic dividend is not an automatic process, but one which requires appropriate investments in human and physical capital and policies that are supportive of inclusive and sustainable economic growth. This analysis was, therefore, commissioned to provide direction for investments and policies needed in social and economic sectors to harness the country's demographic dividend and spur economic growth. The analysis provides interesting insights for future policy making. Income patterns among youth cohorts illustrate the need for more favourable labour market conditions for the employment of young people. The large flows of remittances due to labour migration calls for a better understanding of the factors shaping labour migration and establishment of employment protection policies.

Finally, building strong institutions is instrumental to ensuring an appropriate economic, social and policy context for equitable economic growth.

The HIV and AIDS epidemic remains one of the greatest public health challenges in Lesotho. This report shows that HIV and AIDS is not an isolated development challenge and is deeply intertwined with the demographic dividend. With prevalence rates at around 25 per cent according to the latest available data, the epidemic has the potential to reduce per capita income and overall potential of the demographic dividend, if the current level of funding for prevention, treatment, care and support programmes is not sustained in the long-term.

The analysis shows that since 1990, Lesotho has experienced a positive demographic dividend, which will run up to the year 2089. However, as the dividend is moving to a declining phase, the country will need to urgently establish a policy framework that accelerates the realization of the demographic dividend. I hope that this report will provide direction across sectors for investments in human capital, specifically through quality education, health, employment creation and institutional strengthening to capitalize on the remaining window of opportunity to maximize the demographic dividend.



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Acronyms

AIDS	Acquired immunodeficiency syndrome
AIM	Aids Impact Module
ART	Antiretroviral therapy
CMS	Continuous Multipurpose Household Survey
GDP	Gross domestic product
HBS	Household Budget Survey
HIV	Human immunodeficiency virus
LFS	Labour Force Survey
NTA	National Transfer Accounts
PMTCT	Prevention of mother-to-child transmission
UNAIDS	Joint United Nations Program on HIV and AIDS
UNFPA	United Nations Population Fund

Executive Summary

There is a long history of studying the relationship between population growth and the economy going back more than 200 years. Over the past three decades, however, the focus has shifted to the impact of the age structure of the population on the economy, following a half-century of rapid changes in national populations across the globe. These changes are the result of the demographic transition, which sees populations move from a steady state of high fertility and high mortality rates, to one of low fertility and low mortality rates. In the initial stages of this process, the population growth rate accelerates, raising the number of children within the population, often significantly. Over time, these populations, dominated by children, gradually evolve as larger numbers enter the working ages, and eventually, as they enter old age.

The shift from an age structure that is dominated by children to one dominated by the working-age population may see the country reap a demographic dividend, sometimes referred to as a first demographic dividend. The demographic dividend refers to a period during which the changes in the age structure of the population are supportive of economic growth, higher consumption, improved living standards, and greater investment in human, physical and financial capital. As the population ages further, the rising share of the elderly within the national population may put pressure on living standards. However, this further ageing may also give rise to a second demographic dividend, as the investments in financial, physical and human capital made during the first demographic dividend period are leveraged to raise productivity and, therefore incomes.

The demographic dividend operates over long-time scales and is dependent on policymakers creating an environment that is supportive of the attainment of the demographic dividend. Critically, the dividend is not automatic: without the appropriate policy environment—including policies in education, health, job creation, and the strengthening of institutions—the dividend may not materialize or may not be adequately harnessed. Given pressing developmental challenges, not fully capitalizing on the demographic dividend may impose significant costs on future generations.

This report analyses the potential demographic dividend in Lesotho through the lens of National Transfer Accounts. These accounts measure resource flows across generations and allow us to study how different generations draw on different types of resources—labour income, transfers, and assets—to fund their consumption. The methodology also enables us to estimate and analyse the demographic dividend, to identify the period during which the dividend may be harnessed, and to explore the types of changes in the socioeconomic context that might boost or constrain the demographic dividend.

While Lesotho's population is relatively young, it has already begun to age and will continue to do so for the rest of the century. In the process, Lesotho's economy, societal priorities, and patterns of government spending will be impacted. At the same time, Lesotho is faced with challenges related to slow economic growth rates, high unemployment, and poverty, and has been particularly hard hit by HIV and AIDS, which together with the more recent effects of COVID-19, serves to erode the country's human capital base. These various challenges highlight the value of suitably harnessed demographic dividend in achieving improved socioeconomic outcomes in the country but may also act to constrain the attainment of the dividend.

This research, launched by the Lesotho Government on 7 October 2021, aims to answer several questions. These questions focus on the nature of the economic lifecycle in Lesotho, the projected demographic dividend, and the impact of reductions in funding for HIV prevention and treatment programmes and of the COVID-19 pandemic on Lesotho's demographic dividend. The results presented here are the culmination of a series of engagements with representatives from a range of government ministries in Lesotho aimed at exploring the National Transfer Accounts (NTA) methodology, accessing relevant data, and validating the findings of the research.

A core component of the research is the construction of the Lesotho's first NTA profiles for labour income and consumption. While these profiles exhibit the same broad patterns as observed in other countries, there are some important differences. Per capita labour income as a proportion of peak labour income is relatively low in Lesotho amongst youth cohorts when compared to other countries. This pattern is observed in various countries in the region and is linked to the unfavourable labour market conditions for the employment of young people. Addressing this issue may take the form of various types of interventions targeting a number of aspects of young people's labour market participation. Thus, policies that aim to increase labour force participation rates, their likelihood of employment, their hours of work, their distribution across occupations, or their wage rates would all, if successful, be able to increase per capita labour income for these cohorts.

Per capita consumption expressed as a proportion of peak labour income is high in Lesotho in global comparison. Indeed, per capita consumption for some cohorts is as much as twice as high as the global median. This high level of consumption is made even clearer when the two profiles—consumption and labour income—are compared: in Lesotho, there is no age where per capita labour income exceeds per capita consumption. In other words, all age cohorts produce lifecycle deficits. This makes Lesotho only one of two countries, along with El Salvador, where there is no lifecycle surplus on average for any age cohort.

The key explanation for this phenomenon—in Lesotho as in El Salvador—is labour migration and the resulting large flows of remittances to sending households in the form of private transfer inflows. Indeed, with remittances in Lesotho estimated at more than one-fifth of gross domestic product (GDP) in 2019, it is unsurprising that such high levels of consumption can be achieved. These estimates clearly illustrate the risk to per capita consumption levels in Lesotho posed by potential disruptions to remittance flows through, for example, reduced labour migration. To put these figures in context, in 2015, total consumption in South Africa was equivalent to 63 per cent of GDP, compared to 108.1 per cent in Lesotho, while total labour income was 49 per cent and 43.1 per cent of GDP in the two countries. This places added emphasis on the need for jobs-focussed economic policy in Lesotho.

While the prospect of a demographic dividend brings with it the possibility of more rapid economic growth, falling poverty, rising living standards, and more broadly economic development, there are two features of the demographic dividend that are crucial in terms of harnessing the dividend. First, the demographic dividend is temporary. Second, the demographic dividend is not automatic.

While there are different approaches to understanding and quantifying the demographic dividend, the temporary nature of the dividend is broadly recognized. While the dividend period may last for several decades, depending on the pace and nature of the demographic transition, at some point the population age structure will begin to be unfavourable to growth and rising living standards. This temporary nature of the dividend therefore means that policymakers should do all in their power to harness it for their broader developmental objectives. From the NTA perspective, the first demographic dividend is transient. However, the second demographic dividend, which arises as the proportion of the population close to retirement age increases, can result in a permanent increase in living standards, but only in instances where individuals are saving for their retirement. Where societies primarily organize support for the elderly through pay-as-you-go pension schemes or through social assistance, the second demographic dividend will be limited.



From a policy perspective, it is important to emphasize that the demographic dividend does not materialize mechanically simply because the age structure of the population evolves in a particular way. Instead, policymaking must be deliberate and methodical in creating an environment conducive to the realisation of the demographic dividend. In this sense, the demographic dividend represents only a *potential* benefit, which is why the phrasing “window of opportunity” is often employed. This warning is made repeatedly throughout the literature and there are various examples of countries that have been more (or less) successful in harnessing the dividend, depending on their policy environments.

In this regard, institutions—defined broadly—are key to the realisation of the demographic dividend, guiding governments through the complex policymaking and long-time horizons that characterize the dividend process and encompassing the rules by which economic decisions are made by members of society. The quality of institutions is important in several respects. First, strong institutions can ensure that the appropriate economic, social and policy context for the achievement of the demographic dividend. Second, they are important in helping to ensure that the costs and benefits of policies that are implemented are equitably distributed across generations, encouraging inter-generational buy-in to the process. Third, strong institutions curb corruption, which has the potential to derail efforts at achieving a



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demographic dividend. Fourth, strong institutions assist societies to navigate the important policy trade-offs that will need to be considered, and in ensuring policy coordination across a broad range of fronts.

For Lesotho, the estimates presented here suggest that the demographic dividend had turned positive by 1980. By 2089, changes in the population age structure will act to constrain economic growth and rising living standards. Importantly, most of the cumulative demographic dividend over the 1990 to 2100 period lies in the past, with the vast majority of the remaining dividend concentrated within the 2020 to 2060 period. Both these findings highlight the urgency of ensuring that a policy environment supportive of the realisation of the demographic dividend is firmly established within Lesotho. For the full 1990 to 2100 period, Lesotho's cumulative demographic dividend is estimated at 57.1 per cent, equivalent to an average annual growth rate of 0.41 per cent per annum. During the next four decades (2020 to 2060), the demographic dividend will be slightly below this rate (0.38 per cent per annum), while the final 40 years of the century will see the dividend decline to almost zero in average annual growth rate terms.

Based on the analysis, we provide five key recommendations for realising Lesotho's demographic dividend.

Recommendation I:

THE GOVERNMENT OF LESOTHO SHOULD CONTINUE TO WORK TOWARDS ENSURING THAT DEMAND FOR FAMILY PLANNING IS MET.

A number of broad areas of policy have been identified as being particularly relevant in underpinning the ability of countries to harness the demographic dividend. These include family planning, education, health, economic policy, and strong institutions. Access to family planning is a key factor influencing the pace of the demographic transition, which in turn impacts on the magnitude and duration of the demographic dividend period. According to the estimates presented here, lower fertility would enhance the demographic dividend in Lesotho. For the 2020 to 2100 period, the low fertility variant yields a first demographic dividend that is almost one-fifth larger than the baseline dividend in Lesotho. Even while Lesotho is relatively advanced in its demographic transition relative to the average sub-Saharan African country, the pace of the transition is not particularly rapid when compared with transitions in countries that saw strong demographic dividends, such as those in East and South-East Asia.

Recommendation II:

INVESTMENTS IN PROVIDING ACCESS TO HIGH QUALITY EDUCATION UNDERPIN THE ABILITY OF YOUNG PEOPLE TO ACCESS GOOD QUALITY JOBS WITHIN THE LABOUR MARKET, ENSURING THAT LESOTHO IS ABLE TO MAXIMIZE THE REMAINING DEMOGRAPHIC DIVIDEND.

Investments in quality education are critical to ensuring that young people are equipped with the kinds of skills that are valued by employers in the labour market. Better educated workers are typically more likely to be able to find employment and, when employed are more likely to have higher earnings. In both instances, this would serve to raise per capita labour incomes. In addition, improved access to education—particularly for girls—also serves to reinforce the demographic dividend by encouraging labour force participation and delaying marriage and childbearing.

Improvements in educational attainment over time may have a significant impact on the magnitude of the demographic dividend that is eventually realized. This effect may be further strengthened where higher levels of education provide improved access to formal employment, which typically is associated with higher wages. However, the relationship between education and the demographic dividend in Lesotho was not explored as part of this research. This is an important area for potential future work with direct implications for policy. From a policy perspective, however, continued emphasis on improving education—in terms of both quantity (i.e. attainment) and quality—is a crucial component of government efforts in support of the demographic dividend.

Recommendation III:

CONTINUED INVESTMENTS IN HEALTH AND, IN PARTICULAR, SUSTAINED FUNDING FOR THE PREVENTION AND TREATMENT OF HIV AND AIDS IS CRITICAL TO ENSURE THAT THE DEMOGRAPHIC DIVIDEND IS NOT SUBSTANTIALLY ERODED BY ILLNESS AND DEATH.

Alongside education, health is a key aspect of human capital and, by extension the demographic dividend. There are two main channels through which this effect operates, namely through its impact on the efficiency and productivity of education and employment activities, and through its impact on fertility.

HIV and AIDS is a key health challenge in Lesotho, as in many other countries in the region, and the pandemic's management requires a significant resource commitment from government on an ongoing basis. The pandemic may impact the demographic dividend through several channels, impacting infected individuals and their households, as well as the family members who may be required to care for them. The impact of a reduction of funding of HIV and AIDS prevention and treatment programmes on the demographic dividend is modelled on the basis of population projections that reflect these funding changes in the form of reduced access to these programmes. Based purely on these alternative population projections, the data suggests that large scale reductions in funding—and therefore programme access—will erode the demographic dividend. However, the effects are not particularly large.

The analysis goes one step further and simulates the demographic dividend with the same population projections, but this time assumes a slight decline in per capita labour incomes due to HIV and AIDS. In this case, the impact is more substantial, reducing the cumulative dividend during the 2018-2100 period by almost six percentage points (from 17.2 per cent under the 50 per cent reduction scenario to 11.3 per cent). One area that this study was unable to probe in more detail relates to the care burden imposed on family and household members to care for those who are sick and dying due to HIV and AIDS. Care responsibilities impact on carers' own ability to engage fully in the labour market, with the implication that reduced access to treatment would significantly increase the disruption to carers' labour force participation.

Recommendation IV:

EFFORTS AIMED AT CLOSING ANY EDUCATION BACKLOGS ARE CRITICAL IN MODERATING THE LONG-TERM IMPACTS OF THE COVID-19 PANDEMIC AND ENSURING THAT THOSE GENERATIONS CURRENTLY IN THE EDUCATION SYSTEM DO NOT BEAR A DISPROPORTIONATE COST.

As with HIV and AIDS, the COVID-19 pandemic holds important implications for the realisation of the demographic dividend in Lesotho. These impacts operate through three key channels: first, the labour market impact which reduces current per capita labour incomes; second, the educational impact, which may reduce future per capita labour incomes; and third the health impact, which may impact on the population age structure and, indirectly, on education and labour market outcomes going forward. While these effects are not explicitly modelled in this paper, the loss of face-to-face teaching time in countries around the world is clearly problematic. In many contexts, this has created important educational backlogs, which may only be closed through concerted efforts over the medium-term.

The pandemic is also likely to have significantly impacted remittances, although it is not clear to what extent this happened or for how long this impact lasted. Indeed, questions remain as to the extent to which labour migration itself will return to pre-COVID levels given the disruptions due to COVID-19, as well as South Africa's own poor labour market conditions. Importantly, in the face of significant inequalities in Lesotho, it is important to remember that the impact is likely to fall hardest on those at the lower rungs of the socioeconomic ladder.

Recommendation V:

THE GOVERNMENT OF LESOTHO SHOULD IMPLEMENT POLICY THAT EFFECTIVELY ADDRESSES BOTH HIGH UNEMPLOYMENT RATES AMONGST YOUNG PEOPLE AND GENDER GAPS IN LABOUR INCOME.

Economic policy is an important focus area given that the demographic dividend is very much an economic outcome. While countries may invest extensively in developing the human capital of their populations, unless these people are able to deploy that human capital in the labour market, the dividend will be curtailed. Thus, policymakers should work to ensure macroeconomic stability, competitive markets, and economic dynamism. Labour market policy and regulation is key in creating a dynamic labour market that is able to absorb new jobseekers, while also ensuring balance between the interests of the employed and employers, while also considering the needs of the unemployed and those in precarious employment.

The issue of the labour market is clearly illustrated in the analysis. Per capita labour incomes are low (as a proportion of peak labour income) amongst young people in Lesotho when compared to their counterparts in other countries. This is linked to unemployment and employment within relatively low productivity activities, such as informal employment, amongst these cohorts. However, policies that aim to improve the labour market for young people are shown to have a marked impact on the magnitude of the demographic dividend: narrowing the gap between young people in Lesotho and those in the rest of the world between 2018 and 2040, for example, raises the cumulative demographic dividend for the 2020 to 2060 period from 16.2 per cent to 22.8 per cent. Similar effects can be seen in terms of addressing gender inequalities within the labour market. Thus, narrowing the gender gap in per capita labour incomes between males and females by 25 per cent between 2018 and 2040 is shown to generate a cumulative dividend of 23.2 per cent over the 2020 to 2060 period.

Within this context, while the NTA results provide direction as to the desired policy impact such as raising per capita labour income for young people, the methodology does not lead to specific guidance as to the exact policies that should be enacted. This provides policymakers with the freedom to choose policies that are most appropriate for their economies and societies from amongst those policies that would lead to the specific outcome described. In the context of raising per capita labour incomes amongst young people, potential policies may include: investments in post-school education and training interventions that would raise the likelihood of employment of unemployed youth; a youth wage subsidy that reduces the initial cost to employers of employing young people; small business support initiatives and entrepreneurship training targeted to young people; public works programmes targeted towards unemployed youth; or employment services and advice that help to overcome information gaps that keep young people from accessing available employment opportunities. From a gender perspective, some of these policies may be suitable for finer targeting towards young women or women in general. Other policies may include the extension of the early childhood development system, the provision of childcare facilities for working women and women seeking employment, efforts aimed at reducing gender-specialisation in unpaid care work, or specific policies requiring 'equal pay for equal work' if gender gaps are accentuated by discrimination. The exact set of policies, however, should be determined through policymaking and consultation processes with relevant stakeholders.



1

Introduction

It is well-established that changes in the age structure of the population impact national economies in various ways. These changes are the result of the demographic transition, which sees populations move from a steady state of high fertility and high mortality rates, to one of low fertility and low mortality rates. In the initial stages of this process, the population growth rate accelerates, raising the number of children within the population, often significantly. Over time, these populations, dominated by children, gradually evolve as larger numbers enter the working ages and, eventually as they enter old age.

The shift from an age structure that is dominated by children to one dominated by the working-age population may see the country reap a demographic dividend, sometimes referred to as a first demographic dividend. The demographic dividend refers to a period during which the changes in the age structure of the population are supportive of economic growth, higher consumption, improved living standards, and greater investment in human, physical and financial capital. As the population ages further, the rising share of the elderly within the national population may put pressure on living standards. However, this further ageing may also give rise to a second demographic dividend, as the investments in financial, physical and human capital made during the first demographic dividend are leveraged to raise productivity, and therefore incomes.

The demographic dividend operates over long-time scales and is dependent on policymakers creating an environment that is supportive of the attainment of the demographic dividend. Critically, the dividend is not automatic. Without the appropriate policy environment—including policies in education, health, job creation, and the strengthening of institutions—the dividend may not materialize or may not be adequately harnessed. Given the pressing developmental challenges facing countries across the continent, not fully capitalising on the demographic dividend may impose significant costs on future generations.

This report analyses the potential demographic dividend in Lesotho through the lens of National Transfer Accounts (NTA). These accounts measure resource flows across generations and allow us to study how different generations draw on different types of resources—labour income, transfers and assets—to fund their consumption. The methodology also enables us to estimate and analyse the demographic dividend, to identify the period during which the dividend may be harnessed, and to explore the types of changes in the socioeconomic context that might boost or constrain the demographic dividend.



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While Lesotho has a relatively young population, the population has already begun to age and will continue to do so for the rest of the century. These significant changes in the population age structure have the potential to impact strongly on the country's economy, as well as on patterns of government spending. At the same time, Lesotho is faced with challenges related to slow economic growth rates, high unemployment and poverty. In addition, the country has been particularly hard hit by HIV and AIDS which, together with the more recent effects of COVID-19, erodes Lesotho's human capital base. These various challenges highlight the value of a suitably harnessed demographic dividend in achieving improved socioeconomic outcomes in the country, but may also act to constrain the attainment of the dividend. The aim of this report is to analyse how demographic change in Lesotho may be impacting on its economy, and importantly, to ascertain the prospects for a demographic dividend.

This research, launched by the Lesotho Government on 7 October 2021, aimed to answer the following questions:

- 1 What do the profiles of labour income, consumption and the lifecycle deficit in Lesotho look like?
- 2 What is the potential for a demographic dividend in Lesotho?
- 3 What is the timing of the window of opportunity for harnessing the demographic dividend in Lesotho?
- 4 How is the demographic dividend impacted, in terms of timing, duration and magnitude, if assumptions related to fertility and the labour market are varied?
- 5 What is the potential impact of HIV infections under different scenarios of long-term funding of HIV prevention and treatment programmes, and of the COVID-19 pandemic on Lesotho's demographic dividend?
- 6 What are key policy options for harnessing the demographic dividend in Lesotho?

The results presented here are the culmination of a series of engagements with representatives from a range of government ministries in Lesotho aimed at exploring the NTA methodology, accessing relevant data, and validating the findings of the research.



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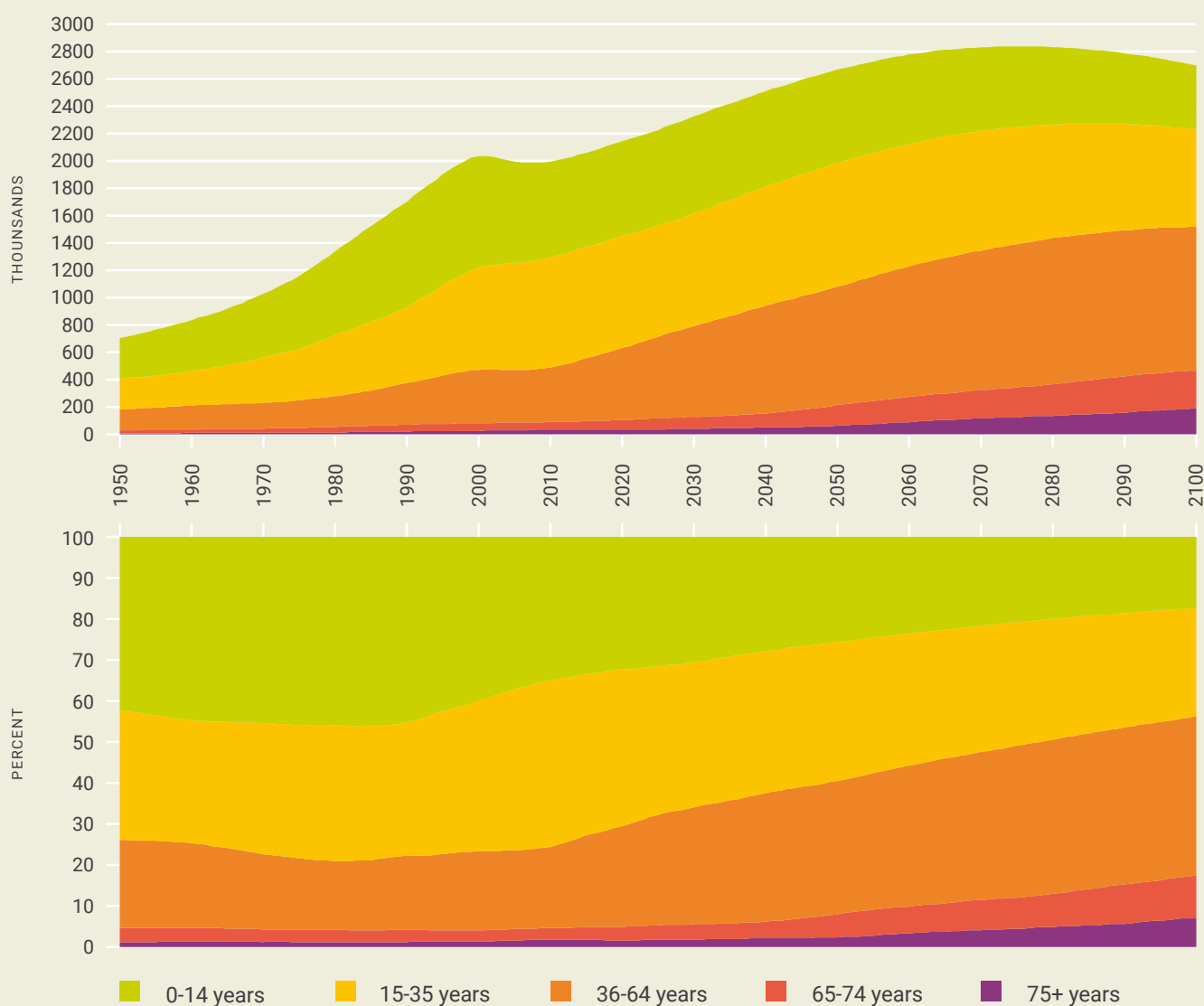
Population Change in Lesotho

National population estimates produced by Lesotho's Bureau of Statistics (BoS) (2019b), using the 2016 national census data, put the country's population at 2.007 million in 2016. The child population (under the age of 15 years) numbered 638 000 (31.8 per cent of the total population), while youth aged 15 to 35 years number 795 000 (39.6 per cent). Thus, more than 70 per cent of the Lesotho population was aged 35 years or younger. Adults aged 36 to 64 years are estimated to number 453 000 (22.6 per cent of the national population), while the elderly (aged 65 years or older) are estimated at 123 000 individuals (6.1 per cent).

The United Nations' (2019) long-range projections indicate a substantial decline in the rate of growth of the population since 1960, from 2.4 per cent per annum between 1960 and 1980 to 0.3 per cent per annum between 2000 and 2020. Population growth is expected to rebound to 0.8 per cent per annum during the 2020 to 2040 period before declining substantially to just below zero in the final 20 years of the century. Relatedly, the next eight decades will see significant changes in the age structure of the population. Children will see their share of the population fall from 32.2 per cent in 2020 to just 17.3 per cent by 2100, while the absolute number of children will be in decline by mid-century. Similarly, the share of youth in the population is projected to decline from 38.3 per cent in 2020 to just 26.5 per cent by 2100. In contrast, the population aged 36 to 64 years is projected to grow rapidly, doubling in absolute terms between 2020 and 2100, and increasing its share from 24.6 per cent to 38.9 per cent of the population. However, the most rapid growth is expected for the elderly population, particularly from 2040 onwards. While this cohort will see its share of the population increase from 4.9 per cent in 2020 to 6.2 per cent in 2040, it will almost triple its share between 2040 and 2100 to reach 17.4 per cent. In absolute terms, Lesotho's elderly population is projected to quadruple over the period to 469 000.

Figure 1 clearly illustrates these significant shifts. By the mid-2030s the older adult population (aged 36 to 64 years) is expected to surpass the child population (ages 0 to 14 years) in size and will overtake the youth population (ages 15 to 35 years) by the mid-2050s. The projections indicate that the elderly population, currently estimated to be less than one-sixth the size of the child population, will equal it by 2100 at just under 470 000. The child and youth populations remain relatively constant in absolute terms over much of this century, but the older adult and elderly populations grow. This results in these older age groups growing relative to the national population.

FIGURE 1 Composition of Lesotho's Population by Age Group, 1950-2100



SOURCE: Own calculations, United Nations (2019)

NOTE: Medium fertility variant projections are used.

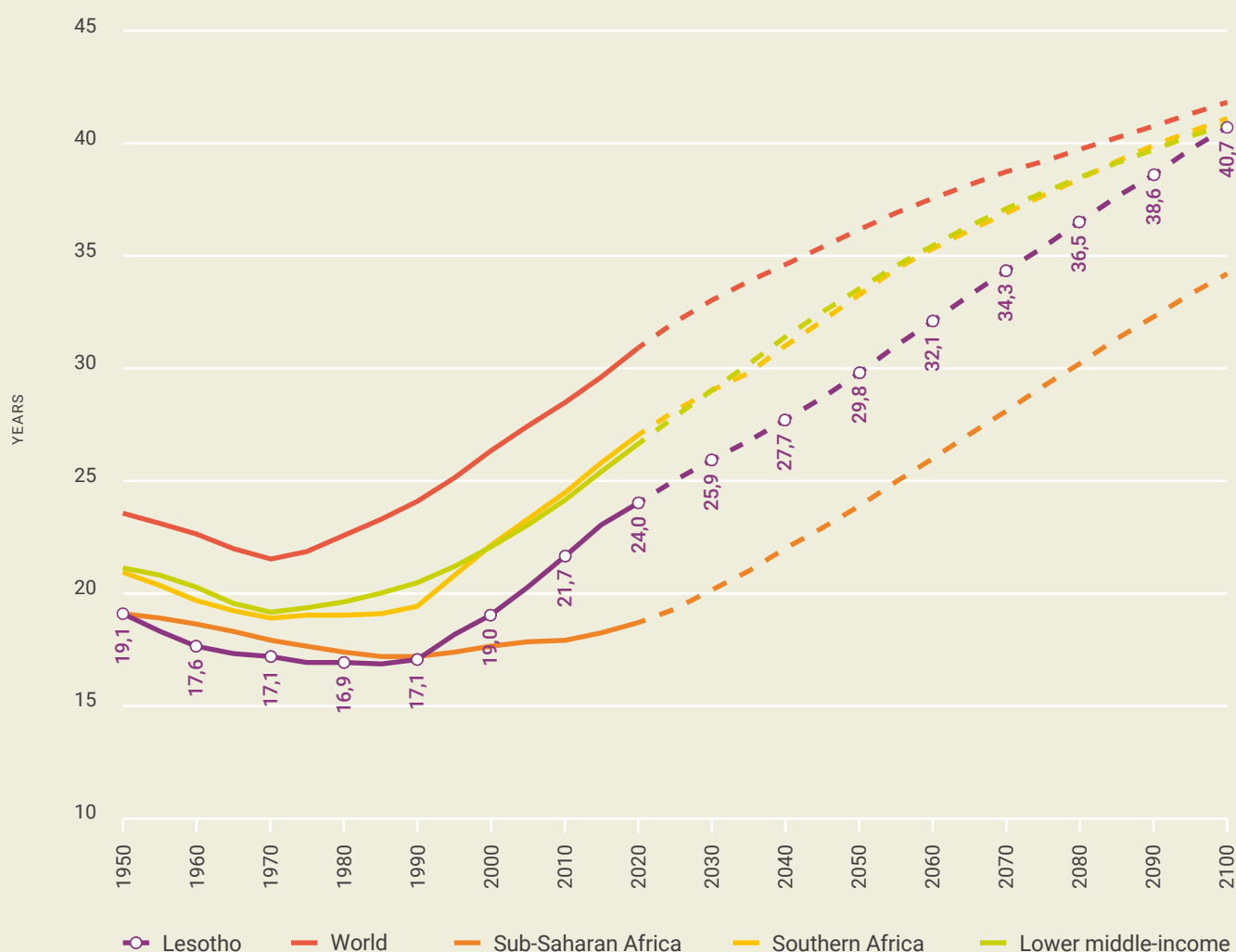
These shifts in the age structure of the population can be readily observed in the way in which the median age of Lesotho's population is projected to evolve over time (Figure 2). The median age divides the population age distribution into two halves, one younger than the median age and the other older. Lesotho's estimated median age was 24.0 years in 2020, having been increasing since 1990. The country's median age is expected to be 29.8 years by 2050 and 40.7 years by 2100.

The rising median age of Lesotho's population is mirrored in the trends observed globally, within Southern Africa, and amongst lower middle-income countries. Globally, for example, the median age is predicted to increase from 30.9 years to 41.9 years between 2020 and 2100. Within the African context, Lesotho's population was, by this measure, slightly younger than the populations of both sub-Saharan and Southern Africa during the 1950 to 1980 period. However, the country's median age surpassed that of sub-Saharan Africa in 1990 and has risen relatively rapidly over the past three decades. This sharp increase is like the trend seen in Southern Africa and amongst lower-middle income countries; however, Lesotho's population is projected to remain relatively young compared to these two country groupings for much of the 21st century.



Lesotho's median age is expected to increase by 0.9-1.0 years every five years from 2020 until 2045, after which the pace quickens to between 1.0 and 1.2 years. By 2060, Lesotho's median age is expected to be 32.1 years, closer to the world median age (37.6 years in 2060) than that of sub-Saharan Africa (26.0 years). Between 2060 and 2100, the difference in median ages between Lesotho and sub-Saharan Africa remains above six years; however, the gap between Lesotho, Southern Africa, and lower-middle income countries is expected to narrow in the years following 2060 and to converge by 2100.

FIGURE 2 Median Age in Lesotho in a Global Context, 1950-2100



SOURCE: Own calculations, United Nations (2019)

NOTE: Medium fertility variant projections are used. Regional groupings defined according to the United Nations classification. Lesotho is classified as a lower middle-income country by the World Bank.

One way in which the relationship between the population age structure and the economy can be understood is through the notion of dependency, which views individuals as either economically productive or not economically productive (and therefore dependent) depending on their age. By comparing the sizes of the economically productive and dependent age groups, the overall level of dependency within a society can be gauged. One measure of dependency at the population level is the total dependency ratio, which is defined as the ratio of the population that is not economically active, such as children under the age of 15 years and elders aged 65 years or above, to the economically productive (working age) population.

More formally, the dependency ratio is defined as:

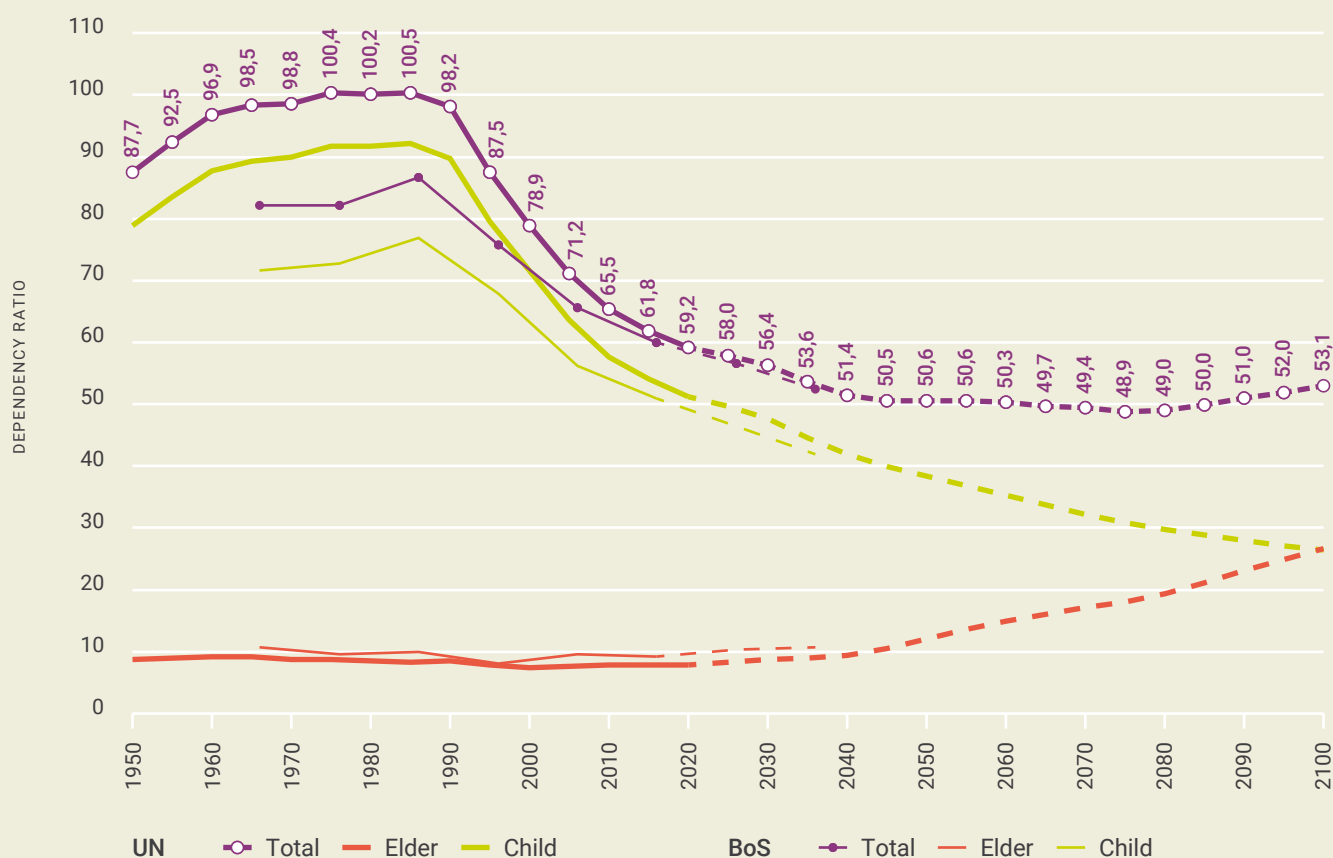
$$DR = \frac{\text{Non-working age population}}{\text{Working age population}} = \frac{\text{Child population} + \text{Old age population}}{\text{Working age population}} \quad (1)$$

Thus, the dependency ratio can also be expressed as the sum of two components, namely the child dependency ratio and the old age dependency ratio, which are respectively the ratio of the child population to the working age population and the ratio of the old age population to the working age population.

Dependency ratios have an underlying link with the concept of the demographic dividend, in that lower dependency ratios—produced when relatively large age cohorts are concentrated within the working ages—are viewed as favourable since they imply less pressure on the economically productive population to provide for the rest of the population. Dependency ratios form the basis for the “demographic window”, which the United Nations (2004, p.2) defines as the period during which “the proportion of children and youth under 15 years falls below 30 per cent and the proportion of people 65 years and older is still below 15 per cent”.

Figure 3 presents these three dependency ratios for Lesotho between 1950 and 2100. Based on the United Nations (2019) data, the total dependency ratio increases from 87.7 in 1950 to peak at 100.5 in 1985. This is followed by a sharp decline in total dependency from 1990 so that by 2020 it is 59.2. The medium fertility variant projections show a continued decline to 51.4 in 2040, after which there is a stabilization at a value of around 50 and an uptick in the final 20 years of the century. Data from the Bureau of Statistics, starting in 1966, follow a similar path. Although the official data yield lower estimates of the total dependency ratio during the latter part of the 20th century, this gap narrows with time such that the estimates from 2016 onwards are very similar.

FIGURE 3 Dependency Ratios in Lesotho, 1950-2100



SOURCE: Own calculations, United Nations (2019); Lesotho Bureau of Statistics (2019a)

NOTE: Medium fertility variant projections are used. Dotted lines are used for years after 2020. Data for Lesotho cover the period 1966 to 2036 in ten-year increments.

A large proportion of the total dependency measure is accounted for by children over the 150-year period. As a result, changes in total dependency between 1950 and 2020 are driven largely by parallel changes in the child dependency ratio. Thus, the child dependency ratio rises from 79.0 children per 100 working-age individuals in 1950 to a peak of 92.2 in 1985, before falling to 51.3 children per working-age individuals by 2020. From 2030 onwards, the relationship between total and child dependency begins to change, with child dependency becoming a smaller portion of total dependency as the population continues to age. The projected old age dependency ratio begins to rise while the child dependency continues downward; the increase is expected to be gradual initially but accelerates noticeably after 2040. Eventually, by the final two decades of the century, the rise in the old age dependency ratio will outpace the decline in the child dependency ratio, forcing the total dependency ratio higher. According to the United Nation's definition of the "demographic window", and based on United Nations (2019) population projections, Lesotho's window of opportunity is projected to open in just over a decade's time in 2033 (child dependency ratio of 29.7 per cent and old age dependency ratio of 5.7 per cent), and to close in 2089 (child dependency ratio of 18.7 per cent and old age dependency ratio of 15.1 per cent).





3

Methodology and Data

3.1 National Transfer Accounts and the Demographic Dividend

This report employs the NTA methodology to analyse resource flows across generations within Lesotho. The formal methodology has been published by the United Nations (2013), and this section provides a broad summary of the approach.

At its core, the NTA approach aims to describe the economic lifecycle, “a universal feature of all contemporary societies” (United Nations, 2013, p.3). When they are young, individuals tend to consume more than they produce through their labour. This is partly because the young are typically not permitted to work in many societies but, even where they do work, their productivity is relatively low on average. A similar situation exists for the oldest members of society: because they do not work at all or because their work intensity is reduced, these individuals also tend to consume more than they produce. Between these two age groups, in the prime working ages, individuals typically produce more than they consume. It is this relationship between income from work and consumption that we are most interested in for this research.

In order to analyse this relationship in Lesotho, age profiles of consumption and labour income must be constructed. An age profile simply describes the way in which the size of a particular resource flow varies with age, with the age range extending from infants at age zero to the elderly, with the oldest cohort typically including all individuals aged 90 years or older. Age profiles have two important aspects. First, age profiles have a shape. It is the profile's shape that indicates whether a specific age group experiences a larger or smaller resource flow of a particular type than another age group. For example, the shape of the labour income age profile will indicate that children have lower labour income per capita than prime working age adults. Second, age profiles have a level. The level of the age profile communicates the actual magnitude of the resource flow, which can be expressed in absolute currency terms or, for example, relative to a particular value such as GDP per capita. By convention, age profiles are often expressed relative to what is referred to here as ‘peak labour income’, which is simply the average per capita labour income for cohorts aged 30 to 49 years. This is particularly useful when comparing profiles across countries.

Both the labour income and consumption profiles are constructed through the aggregation of other sub-profiles. Labour income is comprised of employment earnings and self-employment earnings. Self-employment earnings is closely related to informality, although it is important to note there are both self-employed workers in the formal sector and employees in the informal sector. The consumption profile is constructed from a number of profiles. These profiles can be classified as describing either private consumption or public consumption. Here, the public or private descriptor refers to the sector through which the consumption flows. Thus, payment for a good or service by an individual or household will form part of private consumption, irrespective of whether it was produced in the private or public sector. For example, if a household pays school fees at a government school, this is private consumption. Conversely, a payment by government for the consumption of a good or service is public consumption. Within both private and public consumption, NTA distinguishes two main types of consumption, namely education and health, from the rest. These two flows are interesting from the perspective of NTA because they both exhibit clear relationships between age and the level of consumption. Within both private and public consumption, all other types of consumption are considered together (referred to as 'consumption other than education and health'). These distinctions yield six profiles that together form the consumption profile and that, depending on the data, may be constructed from other sub-profiles. For example, education profiles may be constructed from separate sub-profiles for each level of education (primary, secondary, tertiary), while health profiles may be constructed from sub-profiles that describe different kinds of health consumption.

The gap between labour income and consumption is referred to as either a lifecycle deficit or a lifecycle surplus. Where labour income is greater than consumption during the prime working ages, cohorts are said to produce a lifecycle surplus (i.e. a surplus of labour income above their consumption needs). In contrast, for the youngest and oldest cohorts, labour income is less than consumption; these cohorts are said to produce lifecycle deficits (i.e. a deficit of labour income to cover their consumption needs).

Importantly, age profiles are constructed as per capita profiles for the entire population within each age cohort. In other words, even if an individual is not economically active or is unemployed, they are included within the calculations of employment earnings and self-employment earnings with earnings of zero. Similarly, individuals who did not consume health care during the reference period are included in the calculations for both private and public consumption of health with consumption of zero. Because of this—and because profiles are constructed to be consistent with national accounts—when a particular profile is multiplied by the age structure of the population (i.e. the number of people in each age cohort) and summed across age, the resulting total equals the value of the aggregate flow. In other words, multiplying the per capita profile for consumption by the age structure of the population and summing across age will yield the value of total consumption in the economy for that year. Similarly, multiplying the per capita labour income profile and the age structure of the population will yield the value for total labour income.



This feature of NTA means that it is possible to consider how the changing age structure of the population may impact on total labour income and consumption over time. If we assume that the labour income and consumption profiles do not change over time, it is possible to estimate total labour income and consumption over time by multiplying the respective profiles by the historical and projected population age structures. Thus, it is possible to see how total labour income and consumption might evolve over time due simply to the changing population age structure.

One way to consider these changes is by calculating what is known as the economic support ratio, which is the ratio of total labour income to total consumption in a particular year. Over time, the economic support ratio will vary as the population age structure changes. If the economic support ratio decreases over time, this would mean that total labour income is increasing less quickly (decreasing more slowly) than total consumption. In the absence of any other changes, it can be shown that this would mean that households and societies would find that average living standards would fall. Conversely, a rising economic support ratio implies that total labour income is increasing more rapidly (or decreasing more slowly) than total consumption, and that living standards are rising.

This, in effect, is the demographic dividend (or, in NTA terms, the first demographic dividend). In periods where the changing population age structure leads to a rising economic support ratio, the country experiences a (positive) first demographic dividend. When this occurs, societies find it easier to raise living standards and invest in human and other forms of capital. This occurs as the population becomes more concentrated within the peak productive age cohorts; depending on the country, these cohorts are usually those cohorts in their thirties, forties and fifties. However, if the population become more concentrated outside of these productive ages, the economic support ratio falls, and demographic change becomes a drag on growth and living standards. In practical terms, this occurs when countries experience high rates of population growth, raising the proportion of the population within the younger age cohorts, or during the process of population ageing when the elderly population grows rapidly relative to the total population.

3.2 Data

NTAs typically draw on a range of national and international data sources in order to determine the shape of the various profiles and, subsequently, to determine their level. For this research, we primarily rely on the 2017/2018 Household Budget Survey (HBS), which was run as a module within the Continuous Multipurpose Household Survey (CMS) by the Lesotho Bureau of Statistics (2021e), and the 2018 Labour Force Survey (LFS) (2021a) in order to determine the shapes of the profiles. In addition, data from national accounts were used to ensure that the profiles were at the appropriate level. National accounts data was sourced from estimates published online by the Bureau of Statistics (2021c); the Bureau also provided certain additional unpublished estimates. In addition, reference was made to the national accounts data published by United Nations (2021), which itself draws from estimates produced by the Bureau of Statistics.

The final major data source is the estimates and projections of the Lesotho population by single-year age cohorts, published in the United Nations' 2019 Revision of the World Population Prospects (United Nations, 2019). Baseline projections of the demographic dividend make use of the medium fertility variant. Lesotho does have official population projections for the 2016-2036 period (Lesotho Bureau of Statistics, 2019b). Unfortunately, they cover only two decades, roughly one-quarter of which lies in the past, and we therefore rely on the United Nations projections instead.





4

National Transfer Accounts for Lesotho

4.1 Labour Income

4.1.1 Labour Income in Lesotho

Figure 4 presents Lesotho's labour income profile relative to those of 66 countries for which there are currently data in the NTA database¹. The cross-country estimates, using only each country's most recent estimates, are summarized in two ways. First, the global median represents the profile that results by taking the median per capita labour income across countries at each age. Second, the shaded areas represent different ranges of values taken by per capita labour income in countries, with the interquartile range representing the 'middle' 50 per cent of values, between the 25th and 75th percentiles. The lightly shaded area represents the range between the 10th and 90th percentiles; the per capita labour income estimates of 80 per cent of countries in the NTA database fall within this range. To enable this comparison across countries at very different income levels, all countries' profiles are expressed relative to the average country-specific labour income for cohorts aged 30 to 49 years. In the case of Lesotho, this average is LSL 17 152 per annum in 2018.

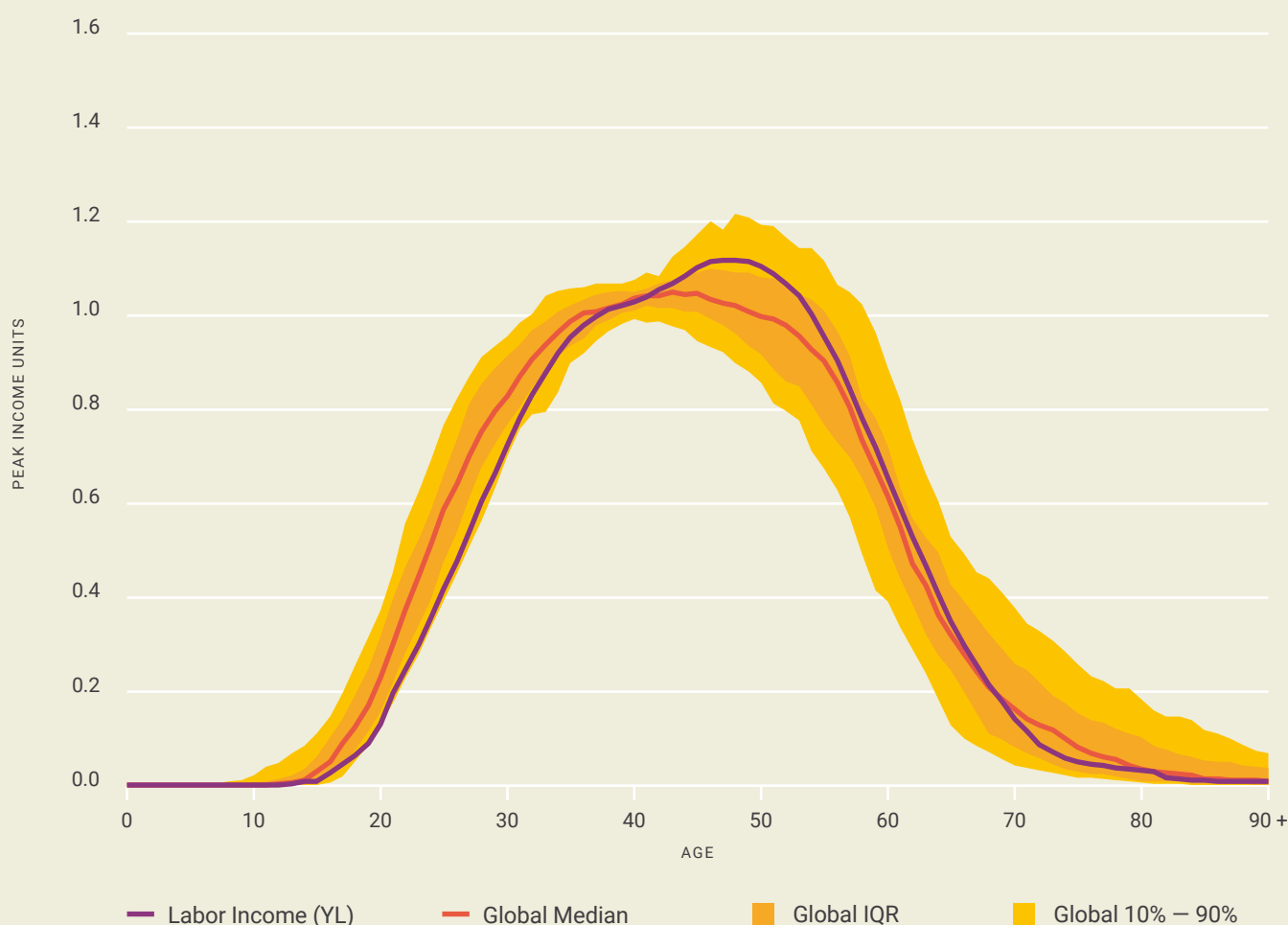
Several features of the shape of the Lesotho labour income profile become evident in this comparison. First, labour income is low for young people in Lesotho when compared to their counterparts in most other countries. This is the result of a significantly slower increase in labour income amongst cohorts in the latter half of the teens. While per capita labour income in Lesotho was almost identical to that of the median country at age 14 years, by age 20 years it was 9.8 per cent of peak labour income (of 0.098 peak labour income units) lower. At its peak in the mid-twenties, per capita labour income in Lesotho was 16.9 per cent of peak labour income lower than that in the median country. This puts Lesotho below the 25th percentile of countries for all cohorts in their twenties. This finding is characteristic of countries in Southern Africa that experience high levels of youth unemployment, including South Africa (Oosthuizen, 2015), Botswana (African

¹ Countries and year of latest estimate included are: Argentina (2016); Australia (2010); Austria (2010); Benin (2007); Burkina Faso (2014); Brazil (2008); Botswana (2010); Cambodia (2009); Cameroon (2014); Canada (2011); Central African Republic (2008); Chad (2011); Chile (2018); China (2014); Côte d'Ivoire (2014); Colombia (2014); Costa Rica (2013); El Salvador (2010); Eswatini (2011); Ethiopia (2005); Finland (2006); France (2011); Gabon (2005); Gambia (2015); Germany (2008); Ghana (2005); Guinea (2012); Guinea-Bissau (2010); Hungary (2005); Indonesia (2005); India (2004); Italy (2008); Jamaica (2002); Japan (2004); Kenya (2005); Laos (2012); Maldives (2010); Mali (2015); Mauritania (2014); Mexico (2014); Moldova (2014); Mongolia (2014); Mozambique (2008); Namibia (2012); Niger (2014); Nigeria (2016); Peru (2007); Philippines (2015); Poland (2012); the Russian Federation (2016); São Tomé and Príncipe (2012); Senegal (2011); Sierra Leone (2011); Singapore (2013); Slovenia (2010); South Africa (2005); South Korea (2016); Spain (2008); Sweden (2006); Taiwan (1998); Thailand (2017); Timor-Leste (2011); Turkey (2006); United States (2011); Uruguay (2013); and Vietnam (2008).

Institute for Development Policy, 2018), and Namibia (Republic of Namibia, 2018). Low per capita labour incomes amongst youth cohorts may also indicate marginalization of young people into lower productivity activities, such as found in the informal sector.

Second, labour income peaks later in Lesotho than in the median country. As noted, labour income in Lesotho peaks at age 48 years; in the median country, it occurs three years earlier at age 43 years. Unlike the median labour income profile, which has a relatively flat peak—between the ages of 36 and 51 years (16 cohorts), per capita labour income remains within a range of 0.05 peak income units (from 1.00 to 1.05)—the Lesotho profile has a sharper peak, with only eight cohorts within 0.05 income units from the profile's maximum. In contrast to youth cohorts, Lesotho's labour income profile for cohorts around this peak is in the top quartile of countries for which estimates are available.

FIGURE 4 Labour Income for Lesotho in Comparison to Global Estimates



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c); United Nations (2019, 2021); World Bank (2022); National Transfer Accounts Project (2022)

NOTE: All country estimates are standardized by dividing by the country-specific average labour income for cohorts aged 30 to 49 years.

Finally, labour income amongst elderly cohorts in Lesotho is low in comparison to many other countries. As is the case for youth, all cohorts aged 69 years and older have lower per capita labour income than the median country. The gap is particularly pronounced in the early seventies, ranging between 0.040 and 0.048 income units between the ages of 72 and 74 years. This, on its own, is not necessarily a concern, although it does mean that elderly cohorts would be more dependent on other sources—transfer inflows from the state, from their own or other households, or asset income or dissaving—to finance their consumption. The generosity of transfers and the extent of accumulated assets in old age are, then, an important determinant of consumption for elderly cohorts. In addition, the exact source of financing for consumption would have important implications for the realisation of a second demographic dividend.

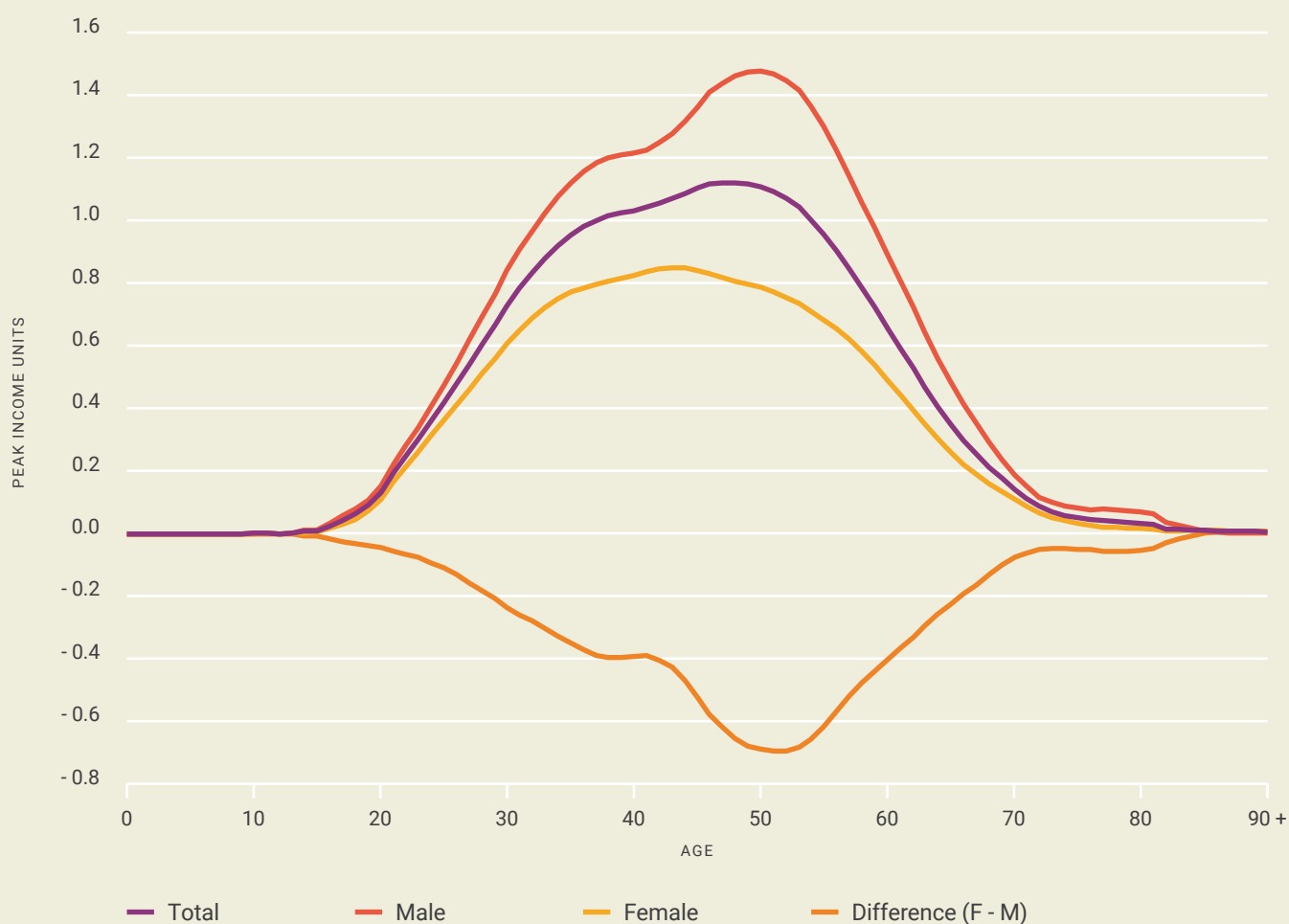
4.1.2 Gender Differences in Labour Income

There are significant differences in the labour income profiles for males and females in Lesotho. Figure 5 presents the male and female labour income profiles relative to the overall profile, and also plots the difference between the two gender-specific profiles (female *minus* male). While both of the gender-specific labour income profiles exhibit the same general shape, there are some important differences between them.

Clearly, per capita labour income is higher for males than females across virtually all the life course, a reflection of the advantage males have in per capita employment earnings. The only cohorts where this is not the case are the very oldest aged in their eighties (and one in the early teens), where per capita labour incomes are close to zero. The disadvantage in terms of per capita labour income experienced by females in Lesotho is greater than 10 per cent of peak labour income for 45 age cohorts (aged 25 to 69 years) and is at least 30 per cent of peak labour income between the ages of 33 and 62 years. At its peak in the late forties and early fifties, this difference exceeds two-thirds of peak labour income, or more than four-fifths of females' per capita labour income at that age.

The gender difference in labour income profiles is the result of more rapid increases in per capita labour income for males for younger cohorts and a surge in male per capita labour income in the late forties as female labour income begins to fall, resulting in a significantly later decline for males relative to females. This has resulted in the fact that, while the female labour income profile is relatively symmetrical (if slightly leaning towards younger ages), that of males is tilted noticeably towards older cohorts. Thus, while per capita labour income peaks at 48 per cent above peak labour income at age 50 years for males, it peaks at age 43 years for females (at just over 85 per cent of peak labour income). Importantly, however, the female labour income profile is relatively flat around this peak, indicating a plateauing of per capita labour incomes for females over a range of ten age cohorts or more.

FIGURE 5 Labour Income Per Capita in Lesotho by Gender, 2018



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c); United Nations (2019, 2021); World Bank (2022)

NOTE: The difference between the male and female profiles is calculated as the female profile minus the male profile.

It is important to note that these differences in labour incomes between males and females are the result of a range of possible factors. This is because these profiles are constructed as averages across individuals within each age cohort and therefore reflect, amongst other factors, differing levels of labour market engagement. For example, differences between males and females in labour force participation and employment rates, educational attainment, the occupational distribution of employment, or hours worked would all contribute towards widening or narrowing the gender gap in per capita labour incomes. Further, women's temporary or permanent exit from the labour force during the prime childbearing and childrearing ages also serves to drive a wedge between the per capita labour incomes of men and women. Similarly, any discrimination against women within the labour market would also contribute towards creating a gap between the male and female labour income profiles.



4.2 Consumption

4.2.1 Components of Consumption

As described in section 3.1, there are six main components within consumption, a set of three each for private and public consumption respectively. These six components are private consumption of education, private consumption of health, private consumption other than education and health, public consumption of education, public consumption of health, and public consumption other than education and health.

Private consumption of education includes all consumption of education by households, and includes spending on “tuition, books and fees, school supplies for all school levels including pre-school, and tutoring expenses [as well as] spending on reference materials and self-improvement classes (art classes, music classes, etc.)” (United Nations, 2013, p.98)². Private consumption of health includes all directly health care-related consumption spending by individuals and their households³. Private consumption other than education and health covers all consumption that is not related to these two categories; this includes consumption of food, clothing, recreation, utilities, and transportation, for example. The profiles of private consumption of education and health for Lesotho are both constructed using the individual-level expenditure data from the 2017/2018 CMS/HBS. For private consumption other than education and health, the profile is constructed using an adult equivalence scale, which recognizes that younger individuals consume less than older individuals⁴.

² In the 2017/2018 CMS/HBS data, expenditures related to tuition/school fees; textbooks; other school materials such as notebooks and pens; examination fees; contributions to the PTA; contributions to construction/maintenance of the school; other educational expenses; private lessons; and tutors are totalled to construct the profile.

³ In the 2017/2018 CMS/HBS, respondents were asked whether they consulted a health-care provider in the four weeks preceding the survey and, if they did, how much they or their household spent in cash or in kind to cover the costs of their visit, and the associated medicines and laboratory tests. No distinction is made on the type of facility—public or private—since all costs borne by individuals and households are considered private consumption.

⁴ The standard adult equivalence scale utilised to allocate private consumption other than education and health is expressed as $a=1-0.6*D4<a<20*20-a16-0.6*Da4$, where a is the consumption weight for individuals age a , and Dx is a variable that takes the value of one if the condition x is met, and zero otherwise (United Nations, 2013, p.100). In effect, this means that infants and children up to the age of four years are allocated a weight of 0.4 and adults aged 20 years and above are allocated a weight of 1.0; between these ages, the weights increase linearly from 0.4 to 1.0 as age increases.

On the public side, consumption refers to public consumption spending: public consumption of education and health covers current spending on these two functions respectively, while public consumption other than education and health includes current spending related to all other functions (e.g. current spending in ministries such as development planning, finance, home affairs, law and justice, and trade and industry). The profiles for the public consumption of education and health in Lesotho are constructed using attendance and utilization rates by age respectively, while the profile for public consumption other than education and health is allocated on a per capita basis as it is assumed that this type of consumption does not vary systematically by age.

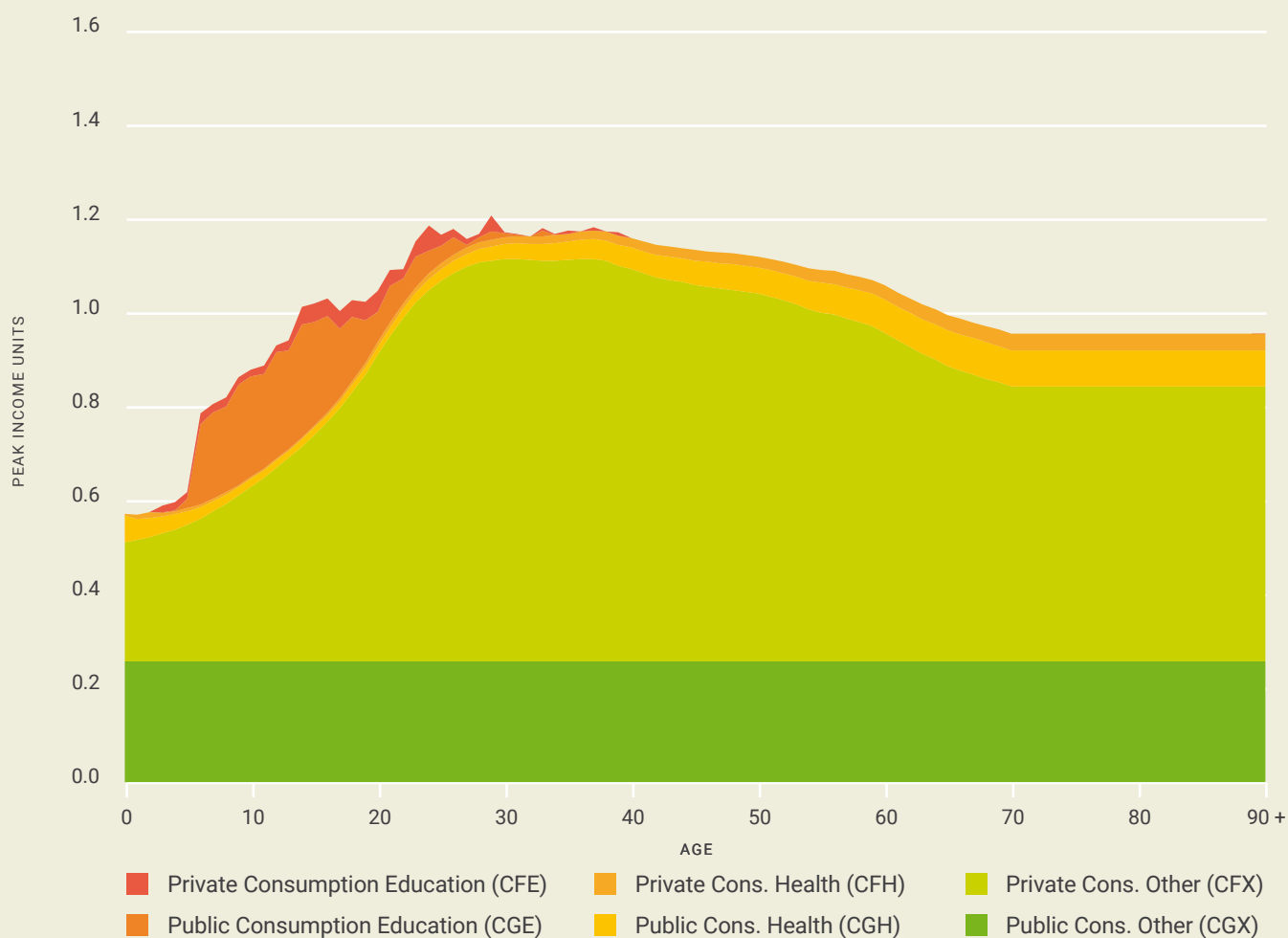
The construction of level-specific profiles for the public consumption of education recognizes that costs per student vary across different levels of education. Thus, for example, the per student cost of university education is far higher than that of primary education. However, this approach does not allow for variation in the cost primary education across different individuals within a given level of education. In other words, if some schools receive higher subsidies than others, this variation is not reflected in the public consumption of education age profiles presented here. Unless this variation in the cost of primary education per student varies systematically with age (e.g. spending for a child enrolled in Standard 7 is higher than spending per child in Standard 1), this assumption should not cause any significant distortions in the age profiles. Similarly, the public consumption of health profile assumes that the per user cost of health-care services does not vary systematically with age, and that costs per patient in the three different health-care facilities—government hospital, government centre, and government clinic—are equal.

The contributions of these six components to total consumption are illustrated in Figure 6, which stacks the six profiles so that the upper bound of the area graphs represents per capita total consumption.

As is to be expected, both public and private consumption of education are concentrated within younger age cohorts, from around age six to the mid-twenties. These profiles are themselves constructed from sub-profiles for six different levels of education: pre-primary, primary, secondary, university, vocational, and other education. In general, per capita levels of public consumption of education are significantly higher than for private consumption, particularly for the youngest school going cohorts.

Health consumption per capita is highest for the oldest cohorts. Here too, public consumption is relatively more important than private consumption in per capita terms. Per capita consumption of health is also relatively high for the youngest age cohorts. Thus, both the public and private profiles exhibit a J-curve shape: relatively high for the youngest cohorts, falling somewhat for teenagers and young adults, and then rising gradually, but consistently, with age.

FIGURE 6 Components of Consumption in Lesotho, 2018



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021c, e); United Nations (2019, 2021); World Bank (2022)

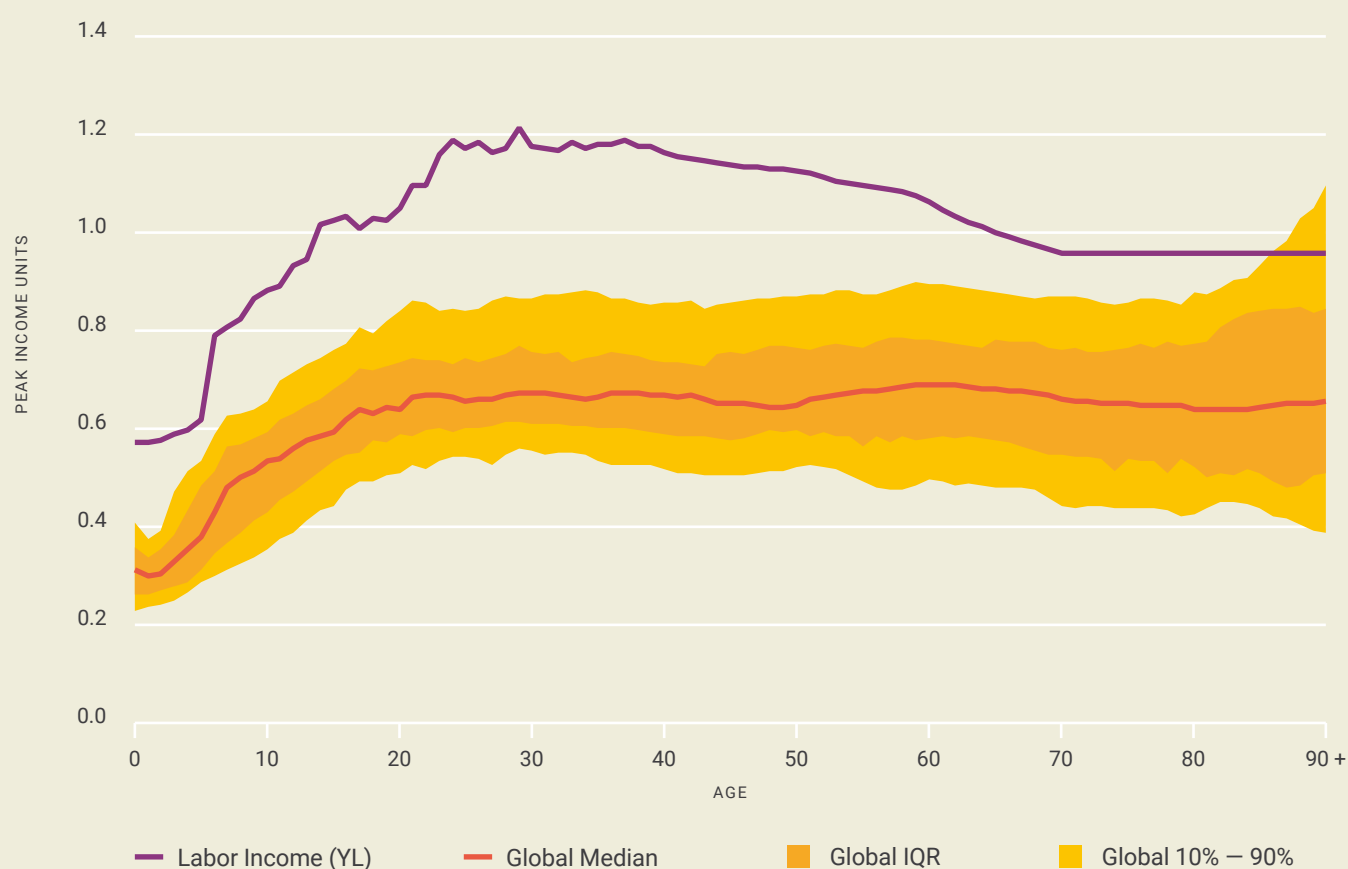
The profiles for consumption other than education and health are, however, very different from each other. For private consumption other than education and health, per capita consumption rises from a relatively low level for infants and very young children and peaks amongst adults in their late twenties and thirties. However, for older cohorts, consumption declines, so that it is around one-third below its peak for cohorts aged 70 years and above. The profile for public consumption other than education and health, in contrast, is a horizontal line at 25.7 per cent of peak labour income (just over LSL 4 400).

The figure clearly illustrates the importance of private consumption other than education and health within total consumption, and the importance of public consumption relative to private consumption in the areas of education and health.

4.2.2 Consumption in Lesotho

Having constructed Lesotho's total consumption profile for 2018, Figure 7 plots it relative to the most recent consumption profiles for all countries for which NTA estimates exist. While Lesotho's labour income profile was seen to be in line with the profiles for other countries (Figure 4), Lesotho's consumption profile is a clear outlier. When expressed in terms of peak income units, per capita consumption in Lesotho is, at almost every age, substantially higher than at least 90 per cent of countries for which there are NTA estimates. Indeed, for much of the life course, Lesotho's per capita consumption in peak income units is close to twice that of the median NTA country. The gap between Lesotho and the median NTA country only really narrows for older cohorts as per capita consumption in Lesotho declines in contrast to the relatively stable consumption levels observed for the median country. Similarly, when compared to the 90th percentile of NTA countries, per capita consumption in Lesotho is between 15 per cent and 52 per cent higher for all cohorts up to the age of 63 years.

FIGURE 7 Consumption for Lesotho in Comparison to Global Estimates



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021c, e); United Nations (2019, 2021); World Bank (2022); National Transfer Accounts Project (2022)

NOTE: All country estimates are standardized by dividing by the country-specific average labour income for cohorts aged 30 to 49 years. See footnote 1 for a list of countries included.

Lesotho's total consumption profile is an outlier in terms of its level, but not in terms of its shape. Even though the median consumption profile, as well as the profiles for the 10th, 25th, 75th and 90th percentiles are relatively stable for cohorts in their twenties and older, there are numerous individual countries that have consumption profiles that peak somewhere in the prime working ages and then decline for older cohorts. Indeed, this pattern has been observed in several countries in the region, including Eswatini (Kingdom of Swaziland, 2017, estimates for 2010), Namibia (Republic of Namibia, 2018, estimates for 2010), South Africa (Oosthuizen, 2015, estimates for 2005) and, to some extent, Botswana (Africa Institute for Development Policy, 2018, estimates for 2010).

Since it is the level of Lesotho's consumption profile that makes it stand out, rather than the shape, and since each country's consumption profile is expressed in peak income units based on its labour income profile, this means that it is this ratio between aggregate consumption and aggregate labour income in Lesotho that is unusual. This will be discussed in more detail in section 4.3, but this points to the role of international labour migration and remittances that, in combination, result in unusually high levels of consumption relative to labour income in a country like Lesotho.



4.4 The Lifecycle Deficit

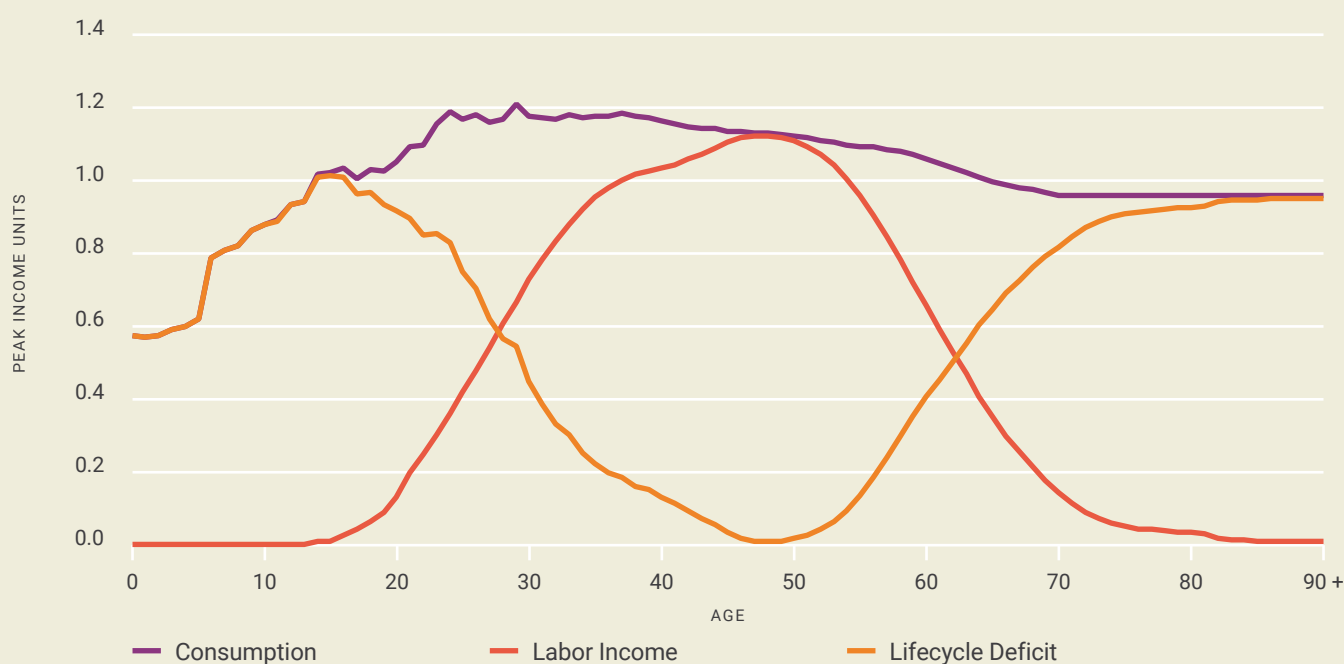
The lifecycle deficit is the difference between consumption and labour income. Where consumption exceeds labour income, this is referred to as a lifecycle deficit; where consumption is less than labour income, this is a lifecycle surplus (a negative lifecycle deficit). The conventional pattern is for there to be lifecycle deficits for children and young people on the one hand and the elderly on the other, interspersed with a lifecycle surplus for cohorts in the prime working ages (see, for example Lee and Mason, 2011).

The lifecycle deficit for Lesotho is presented in Figure 8. In Lesotho's case, however, there is no age cohort where per capita labour income exceeds per capita consumption and therefore there is no cohort that produces a lifecycle surplus. The lifecycle deficit follows the level of per capita consumption from age zero until age 10 years when labour income is first non-zero. The deficit rises from 57.3 per cent of peak labour income at age zero to a peak of 101.4 per cent of peak labour income at age 15 years. From there, the deficit falls rapidly as cohorts increasingly enter the labour market and earn higher wages. The deficit falls below 90 per cent of peak labour income by age 21 years and below 50 per cent by age 30 years. By the late forties, the lifecycle deficit reaches its minimum just below one per cent of peak labour income, and thereafter increases rapidly again to stabilize at around 95 per cent of peak labour income for cohorts aged 80 years and older.

This lack of a lifecycle surplus at any age makes Lesotho only the second country amongst those with NTA estimates where this is the case. El Salvador is the only other country with no lifecycle surplus at any age, while Mexico only has two cohorts that generate a lifecycle surplus (see Figure 10 in the Appendix).

The most obvious explanation for this high ratio of consumption relative to labour income is international labour migration. International labour migration, particularly to South Africa, has long been a feature of Lesotho's labour market. With migrant workers maintaining strong links to households in Lesotho, remittance flows to Lesotho are substantial. Indeed, Lesotho ranks second in sub-Saharan Africa behind South Sudan in terms of the magnitude of remittance flows relative to GDP. It is estimated that remittance flows to Lesotho were equivalent to 21.3 per cent of GDP in 2019, compared to 34.4 per cent in South Sudan, followed by the Gambia (15.5 per cent) and Zimbabwe (13.5 per cent) (World Bank, 2020)⁵. The Lesotho Bureau of Statistics (2021d) finds that 24.4 per cent of households in Lesotho received transfers from abroad over the preceding 12-month period, averaging M 9 074 (roughly US \$613, based on the average exchange rate for 2021 (World Bank, 2022)). Amongst households receiving any transfer, whether from abroad or from within Lesotho, nine out of ten (89.5 per cent) indicated that these were mainly used for expenditure on food and clothing, while 7.2 per cent of these households reported using the transfers mainly for education (Lesotho Bureau of Statistics, 2021d).

FIGURE 8 The Lifecycle Deficit in Lesotho, 2018



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c, e); United Nations (2019, 2021); World Bank (2022)

⁵ In El Salvador, the only other country for which NTA estimates indicate no lifecycle surplus at any age, remittances are estimated at 21.0 per cent of GDP in 2019 (World Bank, 2020, p.21).

International labour migration and remittance flows have several impacts on our estimates of NTA that should be kept in mind in contexts where these phenomena are substantial. The immediate effect of international labour migration is that national accounts estimates of compensation of employees within the country's borders are lower than they might have been had migrant workers been employed domestically. In other words, due to international labour migration, there is an invisible component of what would ordinarily be labour income, but which is only visible within national accounts as private transfer inflows from abroad. To the extent that labour migration may be due to a lack of employment opportunities domestically or that migrant workers are able to earn higher wages than they might have been able to earn domestically, this effect on the national accounts estimates is weakened. This means that the aggregate control values used to adjust the levels of the labour income profile's constituent profiles (employment earnings and self-employment earnings) are smaller than they might have been, resulting in lower estimates of per capita labour income at each age.

Remittances sent from international labour migrants to sending households in Lesotho will most obviously show up as private transfer inflows in Lesotho. Since private transfer inflows, along with all other transfers, do not form part of the lifecycle deficit—net transfers are found on the righthand side of the NTA identity (equation 5)—this impact is not observed in the current set of estimates. However, the impact of remittances may be observed indirectly through its impact on consumption, which may be higher than it might have been without the additional resources provided by remittances.

In effect, large scale international labour migration and remittances distort the relationship between labour income and consumption by acting on both flows to raise consumption relative to labour income. This serves to reduce the margin by which and narrow the range of cohorts for whom per capita labour income exceeds per capita consumption, thus reducing the magnitude and duration of the lifecycle surplus.



5

Estimating the Demographic Dividend in Lesotho

5.1 Lesotho's Demographic Dividend

Section 3.1 outlined how the first demographic dividend can be estimated, within the NTA framework, as the rate of change of the economic support ratio. To calculate the economic support ratio over time, the per capita labour income and consumption profiles are held constant over time and are weighted by the population age structure in each year. In other words, per capita labour income at every age is multiplied by the population at every age, and the same is done for consumption. The population-weighted profiles are then summed over age for every year; these totals are, then, total labour income and total consumption⁶. The economic support ratio is the ratio between these two totals—labour income to consumption—and the rate at which the economic support ratio is the first demographic dividend.

Figure 9 presents the estimated first demographic dividend for the period 1990 to 2100. As described above, these estimates take the 2018 NTA estimates as given, and multiply these by the population age structure in each year to calculate the economic support ratio. The economic support ratio is estimated at 0.399 in 2018, indicating that there were 399 effective producers in Lesotho in 2018 for every 1 000 effective consumers. The economic support ratio has risen substantially since 1990, when it is estimated to have been 0.310, and it is projected to keep rising for the coming six decades. The ratio is projected to peak at 0.491 in 2090, which is almost one-quarter higher than its level in 2018 and more than 58 per cent higher than its level in 1990. By the end of the century, the economic support ratio is projected to have declined only slightly from its peak to 0.490.

Since the first demographic dividend is equivalent to the rate of change of the economic support ratio, the dividend will be positive when the ratio is rising and negative when the ratio is falling. As is evident from Figure 9, this means that Lesotho's demographic dividend is positive for much of the period from 1990 to 2100 and only turns negative in the mid-2080s when the economic support ratio peaks.

The first demographic dividend is, however, not constant over the period. From 1990—and, indeed, from the 1960s—the first demographic dividend has been increasing in magnitude: it increased from 0.424 per cent per annum in 1990 to a peak of 0.717 per cent in 1995. This rise was, however, interrupted by the negative effect of HIV and AIDS on the prime working-age population and the dividend dropped to 0.472 per cent per annum in 2000, before rising rapidly to just over 1.4 per cent per annum in 2012 and 2013. Thereafter, the dividend fell rapidly, reaching 0.908 per cent by 2021. This decline is expected to continue as the population age structure changes so that, by 2040, the

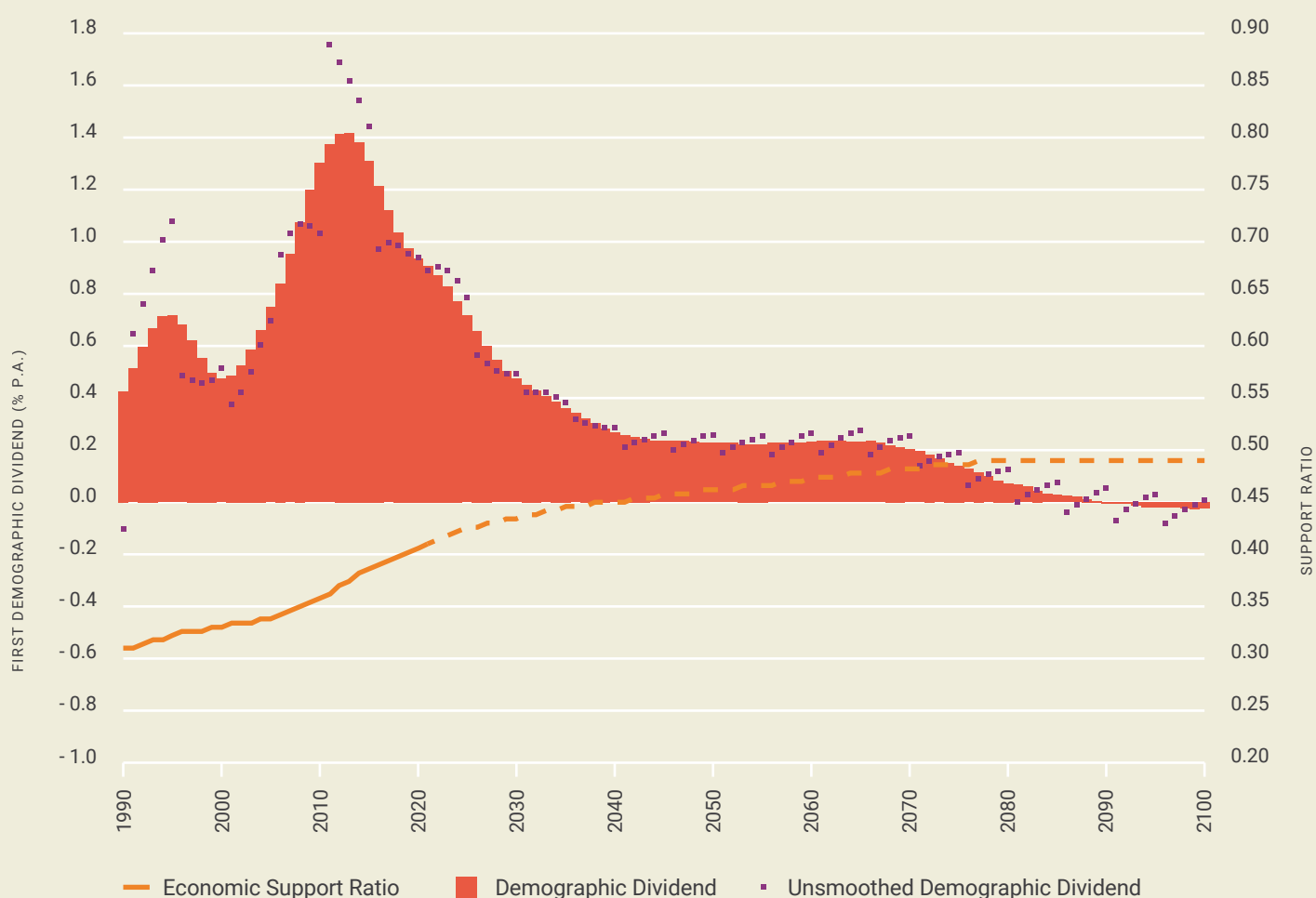
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In the base year, the summed population-weighted profiles will equal the aggregate control values for labour income and consumption.

dividend will be only 0.268 per cent per annum. By the early 2040s, the dividend will stabilize at around 0.23 per cent per annum, where it will remain until the mid-2060s before gradually declining to below zero by 2087.

It is important to note that, although the dividend weakens over time, particularly between the early 2010s and the early 2040s, it remains positive until 2089. This means that the changing population age structure over the almost 100-year period from 1990 serves to raise economic growth and increases consumption per effective consumer. It is only from 2090 onwards that demographic change is projected to act as a drag on the economy and average consumption levels.

FIGURE 9 The Demographic Dividend in Lesotho, 1990-2100



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c, e); United Nations (2019, 2021); World Bank (2022)

NOTE: Medium fertility variant projections are used.

5.2 Alternative Paths for the Demographic Dividend

The projected demographic dividend presented in section 5.1 is based on a particular set of assumptions. These assumptions include the assumptions made during the preparation of the United Nations (2019) population projections, as well as the assumption that the underlying NTA profiles for labour income and consumption remain constant over time. Thus, the projected demographic dividend is sensitive to the population projections used, as well as to changes in the underlying labour income and consumption profiles. It is possible, however, to vary some of these assumptions to better understand their impact on the path of Lesotho's first demographic dividend. We consider three sets of scenarios related to fertility, to the labour market, and to gender inequality within the labour market.

Scenarios related to fertility are based on different population projections. This is useful from a policy perspective in helping to understand how the dividend may be impacted by fertility that is higher or lower than that modelled within the medium fertility projections. The medium fertility variant is one of several variants for which projections are published, each variant having different sets of assumptions with respect to fertility, mortality and migration (United Nations, Department of Economic and Social Affairs, Population Division, 2019). We consider four variants in addition to the medium fertility variant, namely the low fertility, high fertility, constant fertility, and no change variants. The low fertility and high fertility variants are identical to the medium fertility variant in all but one key respect: the low fertility variant assumes 0.5 fewer births per woman on average than the medium fertility variant, while the high fertility variant assumes 0.5 more births per woman on average. The constant fertility variant assumes that fertility remains constant in the future at the levels observed in the 2010 to 2015 period. Finally, the no change variant differs from the constant fertility variant in that, in addition to fertility, it holds mortality constant at 2010 to 2015 levels.

Turning to the labour market, we explore the extent to which it may be possible to boost the magnitude of the demographic dividend through labour market policy in three scenarios. Since per capita labour incomes amongst young people in Lesotho are relatively low when compared with their counterparts globally, the first simulation considers the impact on the demographic dividend of gradually narrowing this gap for cohorts under the age of 35 years between 2018 and 2040 so that, by 2040, per capita labour incomes in Lesotho (relative to peak labour income) are identical to the global median. This is referred to as the 'youth only' scenario. The second simulation, the

'all ages' scenario, is identical to the first except that the gap between Lesotho's labour income profile and the global median profile is narrowed for all age cohorts between 2018 and 2040. Finally, instead of targeting the global median labour income profile, the third simulation ('youth boost') simply gradually raises per capita labour incomes for youth cohorts so that, by 2040, their labour incomes are 10 per cent higher than they were in 2018.

Finally, we consider two scenarios focused on narrowing the gender gap in per capita labour income. As observed in Figure 5, labour income for females is consistently lower than that of males across the life course, with the gap particularly wide during the forties and fifties. The first scenario gradually raises per capita labour incomes for female cohorts, starting from 2018, so that the gender gap is narrowed by 50 per cent at each age by 2040; the second does the same, but only narrows the gap by 25 per cent over the period.

Table 1 quantifies the differences in the projected dividends and presents the cumulative first demographic dividend and the average annual growth rate of the dividend for the 1990 to 2100 period, as well as three 30-40 year sub-periods. Based on the medium fertility projections, the cumulative first demographic dividend is estimated at 57.1 per cent over the 1990 to 2100 period. This is equivalent to an average annual rate of growth of 0.41 per cent per annum over the 110-year period. Clearly, though, most of the dividend accrues during the first 30 years of the period: between 1990 and 2020, the cumulative dividend is 30.3 per cent or 0.89 per cent per annum. The 2020 to 2060 period sees the dividend slow, averaging 0.38 per cent per annum, while the average growth rate for the final four decades of the century is barely above zero (0.09 per cent).

The low fertility variant is the only one of the four variants to yield a larger demographic dividend over the full 1990 to 2100 period (62.6 per cent compared to 57.1 per cent for the medium fertility variant). This is in line with global evidence on the relationship between fertility and the demographic dividend. While this difference is relatively small, the key difference is in the 2020 to 2060 sub-period: the average annual growth rate of the dividend for the low fertility variant is 0.58 per cent per annum, compared to 0.38 per cent for the medium fertility variant. Indeed, over the 2020 to 2100 period, the low fertility variant yields a first demographic dividend that is around one-fifth larger than the baseline dividend. It is also the only variant that is negative for the 2060 to 2100 period as a whole, the result of an early and significant shift into negative territory.

TABLE 1 Estimates of the First Demographic Dividend under Alternative Population Projections, 1990-2100

	CUMULATIVE FIRST DIVIDEND (%)				AVERAGE ANNUAL GROWTH RATE (%)			
	1990-2020	2020-2060	2060-2100	1990-2100	1990-2020	2020-2060	2060-2100	1990-2100
Medium fertility	30.3	16.2	3.7	57.1	0.89	0.38	0.09	0.41

DIFFERENT POPULATION PROJECTIONS

High fertility	30.0	7.8	6.0	48.6	0.88	0.19	0.15	0.36
Low fertility	30.1	26.0	-0.9	62.6	0.88	0.58	-0.02	0.44
Constant fertility	30.0	3.7	0.4	35.4	0.88	0.09	0.01	0.28
No change	30.0	2.3	0.6	33.8	0.88	0.06	0.01	0.26

CHANGES TO THE OVERALL LABOUR INCOME PROFILE

Youth only	31.3	22.8	2.4	65.1	0.91	0.51	0.06	0.46
All ages	31.0	20.0	2.0	60.5	0.90	0.46	0.05	0.43
Youth plus	30.7	18.8	3.2	60.4	0.90	0.43	0.08	0.43

CHANGES TO THE FEMALE LABOUR INCOME PROFILE

Gender gap 50%	31.9	29.2	4.6	78.3	0.93	0.64	0.11	0.53
Gender gap 25%	31.2	23.2	4.3	68.7	0.91	0.52	0.11	0.48

SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c, e); United Nations (2019, 2021); World Bank (2022)

NOTE: Figures are calculated from an index of the support ratio, which equals one in 1990. The cumulative first dividend is the percentage change in this index from the start of the period until the end of the period. This is then converted to an average annual growth rate in the second set of columns.

Higher fertility is expected to erode the magnitude of the first demographic dividend relative to the baseline. The high fertility variant yields a dividend averaging 0.36 per cent per annum over the 110-year period, while the constant fertility and no change variants are even lower at 0.28 per cent and 0.26 per cent per annum respectively. These are equivalent to cumulative dividends over the period of 48.6 per cent, 35.4 per cent and 33.8 per cent respectively.

It is clear from the table that each of the scenarios that adjust the overall labour income profile—the youth only scenario that narrows the gap between the Lesotho labour income profile and that of the global median for cohorts under the age of 35 years between 2018 and 2040; the all ages scenario that does the same, but for all cohorts; and the youth plus scenario that raises per capita labour incomes for youth cohorts by 10 per cent—yields a large demographic dividend than the baseline scenario in the 2020 to 2060 sub-period, as well as for the 1990 to 2100 period as a whole. In the final four decades of the century, the cumulative dividends are very similar to each other, ranging from 2.0 per cent for the all ages scenario up to 3.7 per cent for the baseline scenario. During the 2020 to 2060 period, the youth only and all ages scenarios both yield cumulative dividends of 22.8 per cent and 20.0 per cent (equivalent to an average of 0.51 per cent and 0.46 per cent per annum) compared to the baseline scenario's 16.2 per cent (0.38 per cent per annum on average). The dividend from the youth plus scenario is slightly weaker, though still larger than that of the baseline scenario, at 18.8 per cent for the 2020 to 2060 period, or 0.43 per cent per annum.



The effects of narrowing the gender gap in per capita labour income are even stronger. Narrowing the gap by 50 per cent yields a cumulative dividend of 78.3 per cent over the full 1990 to 2100 period, more than one-third higher than the baseline dividend. This is equivalent to an average annual growth rate of 0.53 per cent per annum over the 110 years. Narrowing the gap by 25 per cent raises the cumulative demographic dividend by 11.6 percentage points from the baseline estimate, to 68.7 per cent or 0.48 per cent per annum on average. This is a stronger effect than achieved through any of the general labour market scenarios.

These simulations are useful in terms of their ability to illustrate the potential impacts on the demographic dividend associated with particular policies and provide a guide as to the kinds of outcomes that may be achieved. Importantly, however, it is important to note that these simulations are not equivalent in terms of describing equally challenging impacts to achieve. Thus, lowering fertility to be consistent with the low fertility variant is not equivalent to achieving convergence in labour income for youth cohorts relative to the global median, or to narrowing the gender gap in per capita labour income by 25 per cent in terms of the challenges associated with achieving these outcomes. That said, the impact of improving per capita labour incomes appears to be larger when focussed on youth cohorts. Nevertheless, raising per capita labour incomes has a beneficial impact on the demographic dividend irrespective of the age group or gender that is targeted.

A final point to emphasize here is that, while the NTA-based estimates of the demographic dividend can illustrate the impacts of changes in either population projections or the shapes of the underlying NTA age profiles on the magnitude of the dividend, they do not dictate specific policy interventions. Instead, policymakers are free to choose any set of policies that achieves a particular outcome from the wide range of potential interventions. This suggests scope for a future policy dialogue process that can identify feasible policy options that have broad backing from stakeholders. Thus, while narrowing the gender gap in per capita labour income is clearly advantageous in terms of the magnitude of the first demographic dividend, this may be achieved through a broad range of interventions. Raising per capita labour incomes for a given cohort may be achieved through raising employment for that cohort, or through raising rates of pay for workers, or by encouraging a shift in the occupational distribution of female employment towards more skilled occupations, or by raising the mean hours of work, for example. It is important that policy choices are sensitive to local conditions and engage fully with the constraints and challenges faced by labour force participants.

5.3 The Demographic Dividend in the Context of HIV and COVID-19

The realisation of a demographic dividend is not an automatic process but requires that societies make the appropriate investments in human and physical capital and implement policies that are supportive of economic growth and development. The demographic dividend is, however, particularly reliant on the quality of human capital available within society. As it is workers who will be generating the labour income, human capital investments—relating specifically to education and health—are crucial in ensuring that work seekers have the necessary skills to find employment and that they are able to be productive within their jobs.

Like other countries in the region, Lesotho grapples with important challenges with respect to human capital investment. This includes, for example, ensuring that children are able to access high quality educational opportunities that will prepare them for their entry into employment, irrespective of their gender, social status, or location. The provision of quality education that is relevant to the national labour market context is crucial in improving the likelihood of young people finding good quality employment upon their exit from the educational system.

A second area of focus is health. In addition to providing quality education and creating an environment conducive to job creation, governments must actively invest in improving the general health of their populations. Deficiencies within the health system will contribute to workers being unable to work productively due to their own ill health and may result in care burdens being placed on working age adults to ensure the wellbeing of others, including children and parents, that may impact on their ability to be fully engaged in the labour market.

5.3.1 HIV and AIDS Funding and the Demographic Dividend in Lesotho

Robust prevention and treatment programmes are key interventions within health policy as a result of the extent of HIV infections in Lesotho. These programmes represent a significant financial commitment over time on the part of both the Lesotho Government and the various donors active in this field. Given competing demands on government's fiscal resources and given that future resources from donors are not guaranteed, the risk therefore exists that sufficient funding in the area of HIV and AIDS prevention and treatment may not exist in future years. This risk has important implications for the demographic dividend through its impact on the human capital of Lesotho's citizens.

An inadequate response to the health crisis that is the HIV and AIDS pandemic is likely to have significant ramifications in terms of the magnitude of the demographic dividend that arises and the ability of societies to harness that dividend. As a result, HIV and AIDS places the demographic dividend “under threat in parts of Africa”, since it has tended to impact younger adults in the working ages (Whiteside and Zebryck, 2017, p.299). Without robust interventions, HIV and AIDS undermines the efficiency of learning and the productivity of workers, with negative consequences for per capita labour incomes.

To model the potential impact of declining financing for HIV and AIDS prevention and treatment programmes on the demographic dividend, three long-term scenarios were modelled using the AIDS Impact Module (AIM) within the UNAIDS Spectrum tool. Together, these scenarios assess the potential effect of HIV infections on Lesotho's population age structure under different assumptions with respect to the long-term funding of HIV prevention and treatment programmes, with the projections running until 2100.

The three scenarios modelled are identical except for assumptions around access to prevention and treatment interventions⁷. The baseline HIV scenario assumes no change in that the current percentage or number of those accessing the prevention of mother-to-child transmission (PMTCT) and child and adult ART programmes remain the same. The second scenario assumes a 50 per cent reduction in the percentage or number of those who are able to access the PMTCT and child and adult ART programmes as of 2022. Finally, the third scenario assumes a total collapse of the PMTCT and child and adult ART programmes as of 2022, so that there is no access whatsoever. While these comparisons are done relative to the baseline HIV and AIDS scenario, it must be noted that they do not capture the full effect of HIV and AIDS on the demographic dividend since the baseline scenario does not reflect an HIV and AIDS-free scenario.

To what extent is the demographic dividend impacted under these scenarios? Applying the population projections produced by these three scenarios to the 2018 labour income and consumption profiles for Lesotho, it is possible to estimate the economic support ratio and the first demographic dividend. While the path of the baseline HIV scenario differs slightly from the original estimate presented in Figure 9, the two estimates appear to be broadly consistent with each other. Table 2 considers the dividend's full impact over the period between 2018 and 2100. As is to be expected, the bulk of the cumulative demographic dividend accumulates during the initial 42 years of the period, estimated at 18.4 per cent or 0.40 per cent per annum in the baseline projection (or 17.8 per cent and 0.39 per cent per annum in the baseline HIV scenario). For the full period, the baseline HIV dividend is estimated to total 16.8 per cent, which is equivalent to an average annual growth rate of 0.19 per cent over the 82-year period.

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The modelling of these scenarios was undertaken by Prof. Clifford Odimegwu and Dr Sasha Frade, of the Demography and Population Studies Programme at the University of the Witwatersrand.

The third scenario (100 per cent reduction) yields the smallest dividend of the three scenarios at a cumulative 16.0 per cent between 2018 and 2100, while the dividend in the second scenario is estimated at 17.2 per cent, which is 0.4 percentage points larger than the dividend in the baseline HIV scenario. The differences between the scenarios are obscured by the inclusion of the 2060 to 2100 period, during which the projected dividend is generally negative. If one were to consider only the 2018 to 2060 period, the baseline HIV scenario would yield a cumulative demographic dividend of 17.8 per cent, compared to 18.5 per cent for scenario 2, and 15.3 per cent for scenario 3. This strong performance in the latter period for scenario 2 appears to be linked by the fact that it is characterized by a relatively large proportion of the population in the older adult cohort and a relatively small proportion under the age of 15 years when compared with the other two scenarios.

TABLE 2 Estimates of the First Demographic Dividend under Alternative HIV Scenarios, 2018-2100

	CUMULATIVE FIRST DIVIDEND (%)			AVERAGE ANNUAL GROWTH RATE (%)		
	2018-2060	2060-2100	2018-2100	2018-2060	2060-2100	2018-2100
PROJECTIONS BASED ON UNITED NATIONS MEDIUM FERTILITY VARIANT						
Baseline	18.4	3.7	22.9	0.40	0.09	0.25
PROJECTIONS FROM AIDS IMPACT MODULE, UNAIDS SPECTRUM TOOL						
Baseline HIV	17.8	-0.8	16.8	0.39	-0.02	0.19
50% reduction	18.5	-1.1	17.2	0.40	-0.03	0.19
100% reduction	15.3	0.6	16.0	0.34	0.01	0.18
PROJECTIONS FROM AIDS IMPACT MODULE, UNAIDS SPECTRUM TOOL						
Combined impact	12.6	-1.1	11.3	0.28	-0.03	0.13

SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c, e); National Transfer Accounts Project (2022); United Nations (2019, 2021); World Bank (2022).

NOTE: Figures are calculated from an index of the support ratio, which equals one in 2018. The cumulative first dividend is the percentage change in this index from the start of the period until the end of the period. This is then converted to an average annual growth rate in the second set of columns.

It is important to note that, while the baseline HIV scenario is outperformed by the scenario that sees access to HIV and AIDS prevention and treatment programmes decline by 50 per cent, these simulations only cover one aspect of the broader changes that can be expected to occur, namely the effects of the different patterns of demographic change that arise due to these changes in access. From an NTA perspective, these projections are unable to capture the potential distortions to the patterns of private consumption of health as individuals choose to redirect consumption of other goods and services towards treatment for HIV and AIDS. However, given how low per capita private consumption of health is relative to total private consumption, it is improbable that a feasible shift in consumption would significantly alter the per capita levels of total consumption and thereby impact on the demographic dividend. Furthermore, these scenarios do not reflect the impact of increased morbidity rates on productivity and the ability to hold onto a job.

Reduced access to HIV and AIDS prevention and treatment programmes therefore has a clear negative impact on health outcomes for infected individuals, which reduces the productivity of those who are employed and may make it difficult for them to keep their jobs. The implication here is a reduction in per capita labour income across the life course but concentrated amongst those ages where prevalence rates and rates of illness combine to create a particularly severe impact. Importantly, working-age individuals may not only be impacted by their own illness, but may also be required to care for sick family members. This care burden may manifest in additional financial demands made of working-age adults, as well as making demands on their time to provide direct and indirect care for the sick. As a result, working-age adults may find themselves needing to provide care for children, other working-age adults, and the elderly, thereby reducing their available time for leisure and self-care activities and, indeed, for employment. The heightened care responsibilities that will arise with reduced access to prevention and treatment programmes may force individuals to choose between employment and being able to provide care, resulting in reduced labour force participation—and therefore lowered per capita labour income—or insufficient care for the ill. To get at some of these issues, however, requires time-use data.

Where children are infected, illness may compromise their school attendance and capacity for learning. This weakening of their human capital may erode their earnings capacity within the labour market and, to the extent that educational attainment is materially impacted, may lower their probability of finding employment when they enter the labour market. Similar effects may arise where children are required to provide care for sick adults within their households.

Evidence on the impact of HIV and AIDS on wages is relatively scarce. One study, however, focused on South Africa, analyses the relationship between cumulative AIDS mortality on wages at the population level, and finds that HIV and AIDS reduced wages for the African population group by between three and six per cent (Chicoine, 2012). Based on this finding, we simulate the combined impact of a reduction in funding for HIV and AIDS prevention and treatment programmes and a generalized wage reduction. Specifically, we use the 50 per cent reduction scenario and, instead of using a constant labour income profile throughout the period, per capita labour incomes at each age are reduced gradually between 2022 and 2042 by five per cent (or 0.25 per cent per annum).

The combined impact simulation yields a demographic dividend that is considerably smaller than in any of the other scenarios. The cumulative dividend, presented in Table 2, is considerably lower than observed for any of the other scenarios. For the full 2018 to 2100 period, the cumulative dividend is estimated at 11.3 per cent, more than one-third lower than under the 50 per cent reduction scenario. All this difference accrues during the initial 42 years of the period: for the 2060 to 2100 period, the cumulative dividend is -1.1 per cent under both scenarios.



5.3.2 COVID-19 and the Demographic Dividend in Lesotho

The world is still reeling from the effects of the COVID-19 pandemic. In most parts of the world, the pandemic was met with significant restrictions on the movement of people that lasted for extended periods of time. Economic activity was severely affected, triggering a global recession and causing extensive disruptions to global supply chains that persist today. At the same time, livelihoods were impacted as firms shed workers and as those in the informal sector were unable to earn a living, plunging millions of households around the world into poverty and forcing governments to respond with a variety of interventions aimed at supporting firms and workers through the worst of the pandemic.

Southern Africa in general, and Lesotho in particular, were not unaffected by the pandemic. Confirmed cases as of April 2022 numbered 33 000 in Lesotho since the start of the pandemic, with almost 700 deaths (Ritchie et al., 2020). As in South Africa, schools in Lesotho were closed for an extended period, disrupting learning and leading to backlogs that will require substantial effort to close. The effect of the pandemic was felt in the labour market in various ways. Undertaken in June 2020, the COVID-19 Socio-Economic Impact on Households Survey (Lesotho Bureau of Statistics, 2020a) found that, in 60 per cent of households, respondents reported having stopped working due to COVID-19 restrictions forcing their places of employment to remain closed, while two-thirds of households who had access to wage income reported experiencing either a partial or total reduction in income from wages due to COVID-19. Only one-fifth of households who had children attending school before the COVID-19 school closures reported that their children had engaged in some learning activity in the week prior to the survey, and only one in 20 households reported that their children had face-to-face contact with teachers (Lesotho Bureau of Statistics, 2020a).

There are three clear routes through which the demographic dividend may be impacted by the COVID-19 pandemic. The first is through the impact on the labour market in terms of job losses and reduced earnings. This has the effect of immediately reducing per capita labour income, although this reduction will dissipate as the labour market recovers over time. Second, there is the impact on the education of children and young people, which may in the longer-term impact on their eventual educational attainment and likelihood of employment. This too may reduce per capita labour incomes, although the impact would only be felt in the future as these cohorts enter the labour market. Unlike the immediate labour market impact, however, the impact through the education channel may be permanent for affected cohorts. Third, there is the health impact. This impact is more challenging to predict, particularly given how little is understood about the future path of the pandemic and the long-term consequences of infection (e.g. symptoms associated with long COVID). What is clear, however, is that deaths tend to have been concentrated amongst older cohorts, which would impact (very slightly, given the number of deaths) on the population

age structure rather than on the NTA profiles themselves. Where there are long-term effects associated with COVID-19 infection, to the extent that they impacted on individuals' capacity to work and learn, these effects would have negative impacts on per capita labour income now and in the future. In addition, any reprioritisation of consumption spending—whether public or private—towards dealing with COVID-19 would potentially impact on the demographic dividend indirectly through the effects of reduced spending in other areas, particularly where such spending is in areas that are supportive of the demographic dividend.

The impact of COVID-19 on Lesotho's demographic dividend is not simulated here due to data constraints and the complex nature of the interactions of the various effects with age and over time. Instead, we draw on work by Sánchez-Romero (2022), who simulates the intergenerational effects of the pandemic using NTAs from 12 predominantly high-income countries within an overlapping generations model. Put simply, the author models the COVID-19 impact through "two unexpected and temporary negative shocks: an economic shock that reduces labour income, and a demographic shock that increases the mortality hazard rates of those infected" (Sánchez-Romero, 2022, p.1). At the same time, two different approaches to government support are modelled, one in which government compensates workers for all income losses experienced due to the pandemic, and one in which there is no compensation for workers.

Several results emerge from the analysis that are relevant to Lesotho.

- ▶ First, the economic impact of the COVID-19 pandemic is found to fall most heavily on individuals aged 25 to 64 years and their children, rather than on elderly cohorts. Measured through, for example, lifetime consumption, it is estimated that a one per cent decline in labour income is associated with a fall in lifetime consumption, on average, of 0.73 per cent for those under the age of 25 years, 0.94 per cent for those aged 25-64 years, and 0.32 per cent for those aged 65 years and above (Sánchez-Romero, 2022).
- ▶ Second, policies that aim to compensate workers for the losses suffered due to the pandemic have the effect of more evenly distributing the economic costs of the pandemic across generations. This is partly achieved by shifting some of the costs from working-age cohorts to elderly cohorts. Thus, these policies enhance intergenerational equity by ensuring that costs and benefits of shocks are shared across generations.

- ▶ Third, labour income losses are found to have negative implications for the stock of public debt. Thus, for example, Sánchez-Romero (2022) finds that a reduction in labour income of one per cent is associated with an increase in the ratio of public debt to labour income, irrespective of whether workers are compensated for economic losses: a one per cent reduction in labour income sees the ratio increase by between 1.2 per cent and 1.6 per cent, depending on whether workers were not or were compensated. This has important implications, for example, for public finances in Lesotho and the fiscal space available to the government to make the necessary investments in achieving the demographic dividend.
- ▶ Fourth, even beyond the differences by age, the impact of COVID-19 is not evenly distributed across groups. Thus, those “in lower socioeconomic groups have a higher probability of losing their jobs and being infected with COVID-19” (Sánchez-Romero, 2022, p.21). This is particularly important within the context of the high degree of inequality in Lesotho and points for support programmes targeted towards the most vulnerable within Lesotho.
- ▶ Fifth, remittances may be even more strongly impacted than labour income, depending on the extent of disruption in key destination countries. Given Lesotho's deep reliance on remittances this is an important consideration. Indeed, the Lesotho Bureau of Statistics (2020b) finds that the proportion of households receiving remittances from outside of Lesotho declined from 7.6 per cent in June 2020 to 3.6 per cent in July.

This final point on remittances is an important one for Lesotho, particularly in terms of understanding their future trajectory. As restrictions on cross-border movement are relaxed, it remains unclear as to whether the number of migrant workers going to South Africa will return to pre-pandemic levels. It is, for example, possible that these workers may have lost their jobs in South Africa or that they have found alternative employment within Lesotho. Over the longer term, South Africa's own challenges of massive unemployment and xenophobia may limit the accessibility of the South African labour market to migrant workers. These various concerns—together or individually—may negatively impact on the volume of remittances flowing back into Lesotho, undermining average consumption levels in Lesotho and thereby dampening economic growth and potentially raising pressure on the government to support consumption levels.



6

**Implications of HIV and
other health challenges for
the demographic dividend**

A core component of the research presented in this paper is the construction of the Lesotho's first NTA profiles. Certain features of these profiles are worth noting. As mentioned above, per capita labour income as a proportion of peak labour income is relatively low in Lesotho amongst youth cohorts when compared to other countries. This pattern is observed in various countries in the region and is linked to the unfavourable labour market conditions for the employment of young people. Addressing this issue may take the form of various types of interventions targeting a number of aspects of young people's labour market participation. Thus, policies that aim to increase labour force participation rates, the likelihood of employment, hours of work, the occupational distribution of employment, or the wage rate for young people would all, if successful, be able to increase per capita labour income for these cohorts.

Per capita consumption expressed as a proportion of peak labour income is high in Lesotho in global comparison. Indeed, per capita consumption for some cohorts is as much as twice as high as the global median. This high level of consumption is made even clearer when the two profiles—consumption and labour income—are compared: in Lesotho, there is no age where per capita labour income exceeds per capita consumption. In other words, all age cohorts produce lifecycle deficits. This makes Lesotho only one of two countries, along with El Salvador, where there is no lifecycle surplus on average for any age cohort.

The key explanation for this phenomenon—in Lesotho as in El Salvador—is labour migration and the resulting large flows of remittances to sending households in the form of private transfer inflows. Indeed, with remittances in Lesotho estimated at more than one-fifth of GDP in 2019, it is unsurprising that such high levels of consumption can be achieved. These estimates clearly illustrate the risk to per capita consumption levels in Lesotho posed by potential disruptions to remittance flows through, for example, reduced labour migration. To put these figures in context, in 2015, total consumption in South Africa was equivalent to 63 per cent of GDP, compared to 108.1 per cent in Lesotho, while total labour income was 49 per cent and 43.1 per cent of GDP in the two countries (own calculations, Oosthuizen, 2019). This places added emphasis on the need for jobs-focussed economic policy in Lesotho.

It is well-established that the shifting distribution of the population across age has important consequences for the economy. For countries with younger populations, the prospect of a demographic dividend brings with it the possibility of more rapid economic growth, falling poverty, rising living standards and, more broadly, economic development. There are, however, two features of the demographic dividend that are crucial in terms of harnessing the dividend. First, the demographic dividend is temporary. Second, the demographic dividend is not automatic.

While there are different approaches to understanding and quantifying the demographic dividend, the temporary nature of the dividend is broadly recognized (for example, Bloom and Williamson, 1998; United Nations, 2004; Pool, 2007; Eastwood and Lipton, 2012; Ahmed et al., 2014; United Nations Population Fund and African Institute for Development Policy, 2015). While the dividend period may last for several decades, depending on the pace and nature of the demographic transition, at some point the population age structure will begin to be unfavourable to growth and rising living standards. This temporary nature of the dividend therefore means that policymakers should do all in their power to harness it for their broader developmental objectives. From the NTA perspective, the first demographic dividend—the demographic dividend presented and discussed in this paper—is transient. However, the second demographic dividend, which arises as the proportion of the population close to retirement age increases, can result in a permanent increase in living standards, but only in instances where individuals are saving for their retirement. Where societies primarily organize support for the elderly through pay-as-you-go pension schemes or through social assistance, the second demographic dividend will be limited.



It is important, from a policy perspective, to reiterate that the demographic dividend does not materialize mechanically simply because the age structure of the population evolves in a particular way. Instead, policymaking must be deliberate and methodical in creating an environment conducive to the realisation of the demographic dividend. In this sense, the demographic dividend represents only a *potential* benefit, which is why the phrasing “window of opportunity” is often employed. This warning is made repeatedly throughout the literature (for example, Bloom et al., 2003; United Nations, 2004; World Bank, 2015; Groth and May, 2017). Indeed, there are various examples of countries that have been more (or less) successful in harnessing the dividend, and these countries have often been characterized by different kinds of policy environments.

In this regard, institutions—encompassing factors such as political freedoms, corruption, infrastructure quality, and labour market regulation (Bloom et al., 2007)—are key to the realization of the demographic dividend as they are instrumental in guiding countries through the complex policymaking and long-time horizons that characterize the dividend process. Strong institutions are frequently cited as key to ensuring that the dividend is properly harnessed (for example, Bloom et al., 2003; Lee et al., 2006; United Nations Population Fund and African Institute for Development Policy, 2015; Zuber et al., 2017). The quality of institutions is important in several respects. First, strong institutions can ensure that the appropriate economic, social and policy context for the achievement of the demographic dividend. Second, they are important in helping to ensure that the costs and benefits of policies that are implemented are equitably distributed across generations, encouraging inter-generational buy-in to the process. Strong institutions are also important in curbing corruption, which has the potential to derail efforts at achieving a demographic dividend (Bloom et al., 2017). Fourth, strong institutions are important for societies to be able to navigate the important policy trade-offs that will need to be considered, and in ensuring policy coordination across a broad range of fronts.

For Lesotho, the estimates presented here suggest that the demographic dividend was already positive prior to 1990 and is expected to turn negative by 2089. After 2089, changes in the population age structure will act to constrain economic growth and rising living standards. Importantly, most of the cumulative demographic dividend over the 1990 to 2100 period lies in the past, with the vast majority of the remaining dividend concentrated within the 2020 to 2060 period. Both these findings highlight the urgency of ensuring that a policy environment supportive of the realisation of the demographic dividend is firmly established within Lesotho. For the full 1990 to 2100 period, Lesotho's cumulative demographic dividend is estimated at 57.1 per cent, equivalent to an average annual growth rate of 0.41 per cent per annum. During the next four decades (2020 to 2060), the demographic dividend will be slightly below this rate, at 0.38 per cent per annum, while the final 40 years of the century will see the dividend decline to almost zero in average annual growth rate terms.

Recommendation I:

THE GOVERNMENT OF LESOTHO SHOULD CONTINUE TO WORK TOWARDS ENSURING THAT DEMAND FOR FAMILY PLANNING IS MET.

A number of broad areas of policy have been identified as being particularly relevant in underpinning the ability of countries to harness the demographic dividend. These include family planning, education, health, economic policy, and strong institutions. Access to family planning is a key factor influencing the pace of the demographic transition, which in turn impacts on the magnitude and duration of the (positive) demographic dividend period. The analysis presented above clearly illustrates how lower fertility would enhance the demographic dividend in Lesotho. Thus, for the 2020 to 2100 period, the low fertility variant yields a first demographic dividend that is almost one-fifth larger than the baseline dividend in Lesotho. Even while Lesotho is relatively advanced in its demographic transition relative to the average sub-Saharan African country, the pace of the transition is not particularly rapid when compared with transitions in countries that saw strong demographic dividends, such as those in East and South-East Asia.

Recommendation II:

INVESTMENTS IN PROVIDING ACCESS TO HIGH QUALITY EDUCATION UNDERPIN THE ABILITY OF YOUNG PEOPLE TO ACCESS GOOD QUALITY JOBS WITHIN THE LABOUR MARKET, ENSURING THAT LESOTHO IS ABLE TO MAXIMIZE THE REMAINING DEMOGRAPHIC DIVIDEND.

Investments in quality education are critical to ensuring that young people are equipped with the kinds of skills that are valued by employers in the labour market. Better educated workers are typically more likely to be able to find employment and, when employed, are more likely to have higher earnings. In both instances, this would serve to raise per capita labour incomes. In addition, improved access to education—particularly for girls—also serves to reinforce the demographic dividend by encouraging labour force participation and delaying marriage and childbearing.

Improvements in educational attainment over time may have a significant impact on the magnitude of the demographic dividend that is eventually realized. This effect may be further strengthened where higher levels of education provide improved access to formal employment, which typically is associated with higher wages. However, the relationship between education and the demographic dividend in Lesotho was not explored as part of this research. This is an important area for potential future work with direct implications for policy. From a policy perspective, however, continued emphasis on improving education—in terms of both quantity (i.e.

attainment) and quality—is a crucial component of government efforts in support of the demographic dividend.

Recommendation III:

CONTINUED INVESTMENTS IN HEALTH AND, IN PARTICULAR, SUSTAINED FUNDING FOR THE PREVENTION AND TREATMENT OF HIV AND AIDS IS CRITICAL TO ENSURE THAT THE DEMOGRAPHIC DIVIDEND IS NOT SUBSTANTIALLY ERODED BY ILLNESS AND DEATH.

Alongside education, health is a key aspect of human capital and, by extension, the demographic dividend. There are two main channels through which this effect operates, namely through its impact on the efficiency and productivity of education and employment activities, and through its impact on fertility. In terms of the impact of health on fertility, for example, Bloom et al. (2003, p.69) argue that health policy is fundamental to the achievement of the demographic dividend given its ability to trigger and support the demographic transition: "Improved sanitation, immunization programs, antibiotics, and contraceptives initiate the declines in mortality that lead to declines in fertility, which together cause changes in the age distribution and size of a population".

HIV and AIDS is a key health challenge in Lesotho, as in many other countries in the region, and the pandemic's management requires a significant resource commitment from government on an ongoing basis. The pandemic may impact the demographic dividend through several channels, impacting infected individuals and their households, as well as the family members who may be required to care for them. The impact of a reduction of funding of HIV and AIDS prevention and treatment programmes on the demographic dividend is modelled on the basis of population projections that reflect these funding changes in the form of reduced access to these programmes. Based purely on these alternative population projections, the data suggests that large scale reductions in funding—and therefore programme access—will erode the demographic dividend. However, the effects are not particularly large. The analysis goes one step further and simulates the demographic dividend with the same population projections, but this time assumes a slight decline in per capita labour incomes due to HIV and AIDS. In this case, the impact is more substantial, reducing the cumulative dividend during the 2018 to 2100 period by almost six percentage points (from 17.2 per cent under the 50 per cent reduction scenario to 11.3 per cent). One area that this study was unable to probe in more detail relates to the care burden imposed on family and household members to care for those who are sick and dying due to HIV and AIDS. Care responsibilities impact on carers' own ability to engage fully in the labour market, with the implication that reduced access to treatment would significantly increase the disruption to carers' labour force participation.

Recommendation IV:

EFFORTS AIMED AT CLOSING ANY EDUCATION BACKLOGS ARE CRITICAL IN MODERATING THE LONG-TERM IMPACTS OF THE COVID-19 PANDEMIC AND ENSURING THAT THOSE GENERATIONS CURRENTLY IN THE EDUCATION SYSTEM DO NOT BEAR A DISPROPORTIONATE COST.

As with HIV and AIDS, the COVID-19 pandemic holds important implications for the realisation of the demographic dividend in Lesotho. These impacts operate through three key channels: first, the labour market impact which reduces current per capita labour incomes; second, the educational impact, which may reduce future per capita labour incomes; and the health impact, which may impact on the population age structure and, indirectly, on education and labour market outcomes going forward. While these effects are not explicitly modelled in this paper, the loss of face-to-face teaching time in countries around the world is clearly problematic. In many contexts, this has created important educational backlogs, which may only be closed through concerted efforts over the medium-term. Shepherd and Mohohlwane (2021), for example, document the tripling of the proportion of South African school-aged children to approximately six to seven per cent by mid-2021, and estimate that pupils—particularly those in grades one through nine—had lost between 70 per cent and 100 per cent of a year of learning.

The pandemic is also likely to have significantly impacted remittances, although it is not clear to what extent this happened or for how long this impact lasted. Indeed, questions remain as to the extent to which labour migration itself will return to pre-COVID levels given the disruptions due to COVID-19, as well as South Africa's own poor labour market conditions. Importantly, in the face of significant inequalities in Lesotho, it is important to remember that the impact is likely to fall hardest on those at the lower rungs of the socioeconomic ladder.

Recommendation V:

THE GOVERNMENT OF LESOTHO SHOULD IMPLEMENT POLICY THAT EFFECTIVELY ADDRESSES BOTH HIGH UNEMPLOYMENT RATES AMONGST YOUNG PEOPLE AND GENDER GAPS IN LABOUR INCOME.

Economic policy is an important focus area given that the demographic dividend is very much an economic outcome. While countries may invest extensively in developing the human capital of their populations, unless these people are able to deploy that human capital in the labour market, the dividend will be curtailed. Thus, policymakers should work to ensure macroeconomic stability, competitive markets, and economic dynamism. Labour market policy and regulation is key in creating a dynamic labour market that is able to absorb new jobseekers, while also ensuring balance between the interests of the employed and employers, while also considering the needs of the unemployed and those in precarious employment.

The issue of the labour market is clearly illustrated in the analysis of Lesotho's NTA profiles and its demographic dividend. Per capita labour incomes are low (as a proportion of peak labour income) amongst young people in Lesotho when compared to their counterparts in other countries. This is linked to unemployment and employment within relatively low productivity activities, such as informal employment, amongst these cohorts. However, policies that aim to improve the labour market for young people are shown to have a marked impact on the magnitude of the demographic dividend: narrowing the gap between young people in Lesotho and those in the rest of the world between 2018 and 2040, for example, raises the cumulative demographic dividend for the 2020 to 2060 period from 16.2 per cent to 22.8 per cent. Similar effects can be seen in terms of addressing gender inequalities within the labour market. Thus, narrowing the gender gap in per capita labour incomes between males and females by 25 per cent between 2018 and 2040 is shown to generate a cumulative dividend of 23.2 per cent over the 2020 to 2060 period.

Within this context, while the NTA results provide direction as to the desired policy impact such as raising per capita labour income for young people, the methodology does not lead to specific guidance as to the exact policies that should be enacted. This provides policymakers with the freedom to choose policies that are most appropriate for their economies and societies from amongst those policies that would lead to the specific outcome described. In the context of raising per capita labour incomes amongst young people, potential policies may include: investments in post-school education and training interventions that would raise the likelihood of employment of unemployed youth; a youth wage subsidy that reduces the initial cost to employers of employing young people; small business support initiatives and entrepreneurship training targeted to young people; public works programmes targeted towards unemployed youth; or employment services and advice that help to overcome information gaps that keep young people from accessing available employment opportunities. From a gender perspective, some of these policies may be suitable for finer targeting towards young women or women in general. Other policies may include the extension of the early childhood development system, the provision of childcare facilities for working women and women seeking employment, efforts aimed at reducing gender-specialisation in unpaid care work, or specific policies requiring 'equal pay for equal work' if gender gaps are accentuated by discrimination. The exact set of policies, however, should be determined through policymaking and consultation processes with relevant stakeholders.



7

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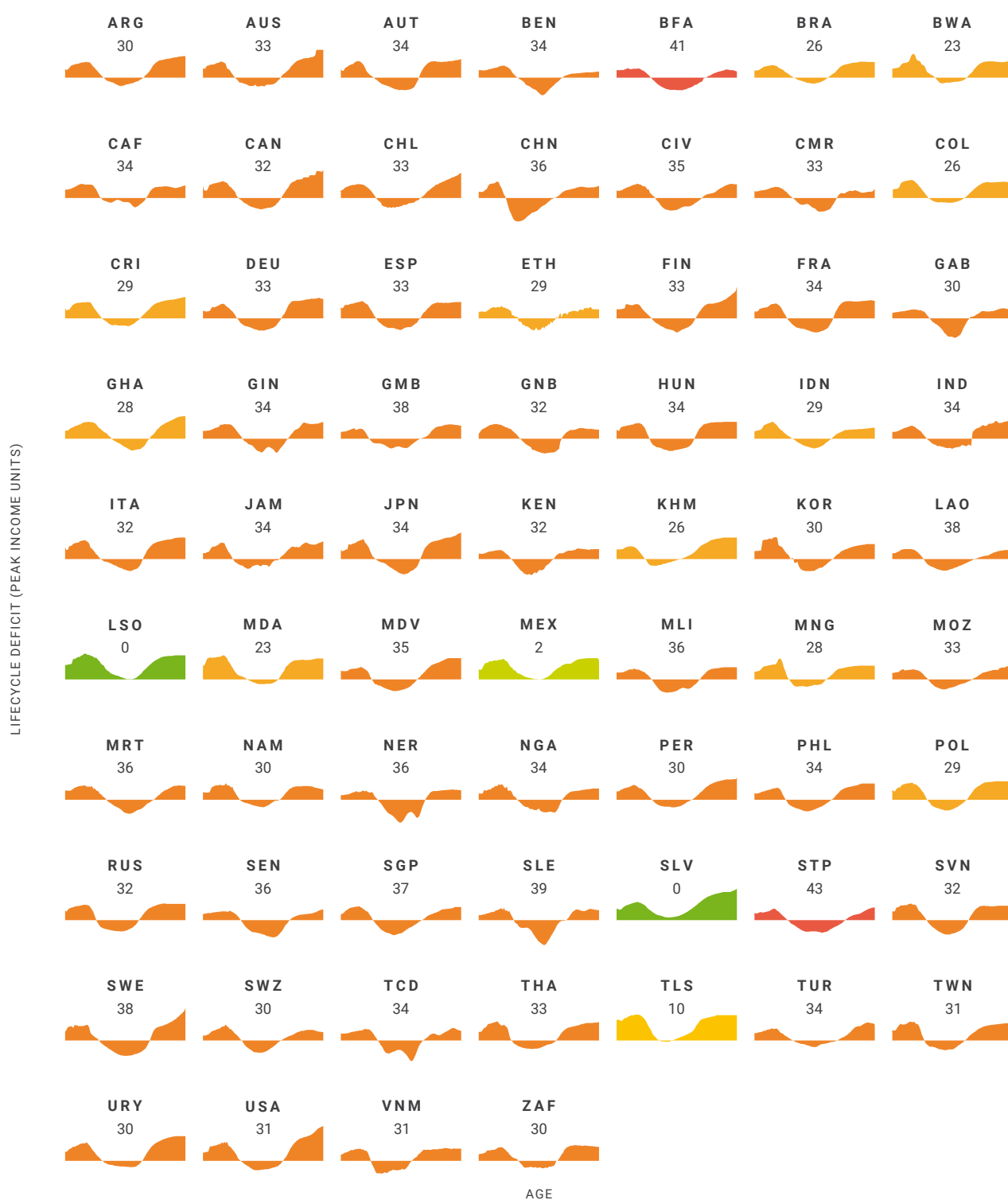
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8

Appendix

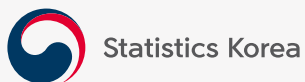
FIGURE 10 Lifecycle Deficits around the World



SOURCE: Own calculations, Lesotho Bureau of Statistics (2021a, c, e); National Transfer Accounts Project (2022); United Nations (2019, 2021); World Bank (2022)

NOTE: Numbers on the graph refer to the number of cohorts that have a lifecycle surplus in that country.





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