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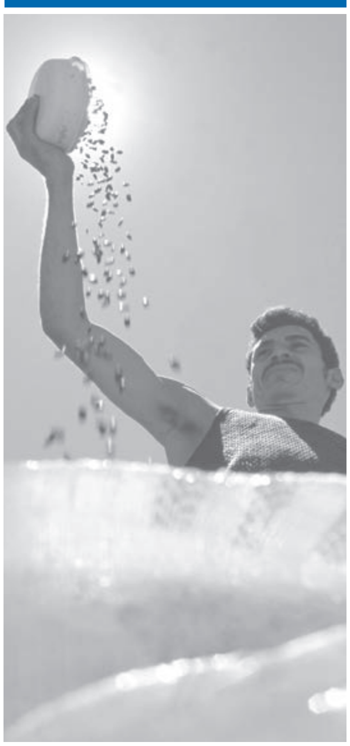
DISCUSSION PAPER NO. 1610

Pension Systems in Sub-Saharan Africa: Brief Review of Design Parameters and Key Performance Indicators

Miglena Abels and Melis U. Guven





October 2016

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Social Protection & Labor

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Abstract

The paper summarizes key design characteristics and performance indicators of national and civil service pension schemes in Sub-Saharan Africa (SSA). It is intended to serve as a resource in pension reform efforts in the region. The note delivers an up-to date assessment of the main design parameters, key performance metrics, and main challenges facing pension systems in SSA. The information provided in the note aims to capture current trends in the region and benchmark performance and pension system design choices made by countries against international experience.

Section I provides an overview of mandatory national pension systems in the region whereas Section II presents the key design features of civil service pension schemes. Section III analyzes the performance of both national and civil service pension schemes; particular attention is paid to the fiscal performance and equity of the pension schemes. Pension system design parameters of both national and civil service pension schemes are discussed in section IV. Section V aims to enhance the paper by providing relevant demographic data and analysis.

JEL Classification: H55, J26

Key Words: national and civil service pension systems in Africa, public pension system expenditure, design and performance indicators of civil service pension systems

Abbreviations

DB	Defined Benefit
DC	Defined Contribution
FDC	Funded Defined Contribution
GDP	Gross Domestic Product
PAYG	Pay-As-You-Go
SSA	Sub-Saharan Africa

Acknowledgements

This paper was written by Miglena Abels (Research Analyst, World Bank) and Melis U. Guven (Senior Social Protection Economist, World Bank). The authors gratefully acknowledge the useful contributions of a number of people who provided data during the preparation of the document: Adrianus Vugs, Fiona Stewart, Gbetoho Joachim Boko, Kouakou Bruno Tano, Lucilla Bruni, Paulette Castel, Sergiy Biletsky, Solene Marie Paule Rougeaux, Benhildah Mundangepfupfu, and Tavares Priscilla. The paper was prepared under the direction of Dena Ringold and Stefano Paternostro, practice managers in the Social Protection and Labor Global Practice. Authors are grateful for the helpful feedback and comments received from Robert Palacios and Will Price of the World Bank.

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Summary

This paper summarizes key design characteristics and performance indicators of national and civil service pension schemes in Sub-Saharan Africa (SSA). It is intended to serve as a resource in pension reform efforts in the region. The paper delivers an up-to date assessment of the main design parameters, key performance metrics, and main challenges facing pension systems in SSA. The information provided in the paper aims to capture current trends in the region and benchmark performance and pension system design choices made by countries against international experience. Section I provides an overview of mandatory national pension systems in the region whereas Section II presents the key design features of civil service pension schemes. Section III analyzes the performance of both national and civil service pension schemes; particular attention is paid to the fiscal performance and equity of the pension schemes. Pension system design parameters of both national and civil service pension schemes are discussed in section IV. Section V aims to enhance the note by providing relevant demographic data and analysis.

I. Mandatory national pension systems

Out of the 44 countries in Sub-Saharan Africa[1] where at least some information is available, 38 countries have mandatory contributory national[2] pension schemes. Out of the 38 countries, 31 are defined benefit (DB)[3] systems financed on a pay-as-you-go (PAYG)[4] basis; four countries have provident[5] funds (Uganda, Swaziland, Kenya, and Gambia); two countries (Malawi[6] and Nigeria) have funded defined contribution schemes (DC), [7] and one country (Ghana) has a hybrid of a DB and a DC system. Six countries (Botswana, Eritrea, Lesotho, Namibia, South Sudan, and South

[1] There are a total of 48 countries in Sub-Saharan Africa.
[2] In this note, national pension schemes refer to schemes operated by the Government which cover private sector workers, and in the case of integrated system, also cover public sector workers.
[3] A Defined Benefit pension plan (DB) is a pension plan with a guarantee by the insurer or pension agency that a benefit based on a prescribed formula will be paid; it can be fully funded or unfunded and notional.
[4] Pay-as-you-go (PAYG) is a method of pension system financing whereby current outlays on pension benefits are paid out of current revenues from an earmarked tax, often a payroll tax.
[5] Provident fund is a publicly run fully funded defined contribution fund.
[6] Malawi has recently established a DC scheme.
[7] A Defined Contribution pension plan (DC) is a pension plan in which the periodic contribution is prescribed and the benefit depends on the contribution plus the investment return. Can be fully funded or notional and nonfinancial.

Africa) do not have a mandatory national contributory pension scheme and instead only have civil service pension schemes for public sector workers, occupational[8] pension schemes for private sector workers provided by employers, and non-contributory old age benefits to those who qualify.

Labor force coverage of national pension schemes varies significantly across the region, but on average it is quite low. Over half of the labor force in Mauritius and Seychelles contributes to the national pension system; coverage is also relatively high in Zimbabwe with around 33 percent of the labor force accruing pension rights. However, across the remaining SSA countries, pension coverage is less than 10 percent of the labor force. The potential issues impeding pension coverage expansion in the region are many. First, mandatory defined benefit pension schemes financed from payroll taxes are typically most successful in countries where the majority of workers are in the formal labor market and hold employment contracts which enable them to contribute to the pension system in a systematic manner. The situation is quite the opposite in Africa where the majority of employment takes place outside the formal economy. As such, one of the defining challenges facing SAA is to think about designing systems which will prove to be attractive and beneficial for the working age population. Table 1 provides an overview of the different pension design choices made by countries in SSA; it also presents latest figures available on labor force and elderly coverage of national pension systems for the countries where recent data are available.

[8] An occupational pension scheme is an arrangement by which an employer provides retirement benefits to employees.

Table 1: Design of Mandatory National Pension Schemes

	Country	National Pension Scheme	Design	Integrated	Active Coverage, % Labor Foce	Beneficiaries, % Population 60+
1	Angola		PAYG DB			
2	Benin	Caisse Nationale de Sécurité Sociale (CNSS)	PAYG DB			4.1%
3	Botswana	*no national mandatory contributory pension scheme*				
4	Burkina Faso		PAYG DB			
5	Burundi		PAYG DB			
6	Cabo Verde	Instituto Nacional de Previdencia Social (INPS)	PAYG DB	X	23.0%	17.1%
7	Cameroon		PAYG DB			
8	Central African Rep.		PAYG DB	X		
9	Chad		PAYG DB	X		
10	Congo, Dem. Rep.		PAYG DB			
11	Congo, Rep.		PAYG DB			
12	Cote d'Ivoire	Caisse Nationale de la Prevoyance Sociale (CNPS)	PAYG DB		7.1%	
13	Ethiopia	Private Organization Employees Social Security Agency (POESSA)	PAYG DB		1.9%	
14	Gambia	National Provident Fund (NPF)	*Provident Fund*			
15	Ghana	Basic National Social Security Scheme Tier 1	Hybrid	X	10.1%	9.7%
16	Guinea		PAYG DB			
17	Guinea Bissau	National Insitute of Social Security (INSS)	PAYG DB		0.2%	2.2%
18	Kenya	National Social Security Fund - NSSF	*Provident Fund*		7.8%	2.3%
19	Lesotho	*no national mandatory contributory pension scheme*				
20	Liberia	The National Pension Scheme (NPS)	PAYG DB		5.4%	3.7%
21	Madagascar		PAYG DB			
22	Malawi		FDC			
23	Mali		PAYG DB			
24	Mauritania		PAYG DB			
25	Mauritius	National Pensions Fund (NPF) first pillar	PAYG DB		54.2%	47.7%
26	Mozambique	INSS	PAYG DB		4.0%	
27	Namibia	*no national mandatory contributory pension scheme*				
28	Niger		PAYG DB			
29	Nigeria	CPS (RSA Scheme)	FDC	X	8.8%	1.5%
30	Rwanda	Pension and Occupational Hazards Scheme (managed by RSSB)	PAYG DB	X	6.0%	6.3%
31	Sao Tome & Principe	National Institute of Social Security (INSS)	PAYG DB	X	19.0%	65.0%
32	Senegal	Provident Institution Retreat Senegal (IPRES)	PAYG DB			
33	Seychelles	Seychelles Pension Fund	PAYG DB	X	63.0%	37.0%
34	Sierra Leone	National Social Security and Insurance Trust	PAYG DB	X	9.4%	6.4%
35	Somalia					
36	South Africa	*no national mandatory contributory pension scheme*				
37	South Sudan					
38	Sudan		PAYG DB			
39	Swaziland	National Provident Fund	*Provident Fund*		19.0%	12.5%
40	Tanzania	NSSF	PAYG DB		1.7%	0.3%
41	Togo	La Caisse Nationale de Sécurité Sociale (CNSS)	PAYG DB		2.8%	10.9%
42	Uganda	National Social Security Fund (NSSF)	*Provident Fund*		3.9%	0.8%
43	Zambia	National Pension Scheme (NAPSA)	PAYG DB	X	8.8%	1.0%
44	Zimbabwe	National Pensions Scheme	PAYG DB		14.7%	26.2%

Source: National sources; staff calculations.

II. Civil service pension systems

Having two separate pension schemes operating in parallel for public and private sector workers is a pronounced characteristic of old age income provision in SSA. Civil servants are covered by pension schemes in all Sub-Saharan Africa countries. Out of the 44 countries where information is available, 33 have separate schemes for public sector workers. In seven countries (Botswana, Lesotho,[9] Liberia, Mauritius, Namibia, South Africa, and Swaziland) public sector workers are typically covered by some type of social pension, in some cases a means or pensions tested benefit, in addition to their civil service pension. Swaziland has a universal non-contributory scheme which is pensions-tested, although it is not clear if the pensions test is applied in practice—potentially meaning that civil servants could benefit from both the civil service scheme as well as the non-contributory program. In Liberia, public sector workers are members of the national pension scheme but also receive a top-up arrangement.

Ten countries (Cape Verde, Central African Republic, Chad, Ghana, Nigeria, Rwanda, Sao Tome e Principe, Seychelles, Sierra Leone, and Zambia) have an integrated pension system meaning that it covers both public and private sector workers alike and there is no separate special civil service scheme for public sector workers. In the case of Cape Verde, integration of the national and civil service pension schemes has been done quite recently. Eritrea and South Sudan have not yet established private sector pension schemes.

The South Africa Government Employees Pension Fund (GEPF) is one of the largest pension funds in the region with over 1.2 million active contributors and over 406 thousand beneficiaries in 2015. GEPF beneficiaries account for 10 percent of the population over the retirement age. The Government Institutions Pension Fund (GIPF) of Namibia is another example of large and well-managed pension fund in a country where there is no national contributory pension scheme. In 2013, GIPF had over 94 thousand contributors, or 11 percent of the labor force, and provided pensions to 56 thousand elderly, or 45 percent of the population above the retirement age.

[9] In Lesotho and Swaziland, social pension programs are pensions tested – eligibility is limited to individuals without access to a contributory pension. However, in practice both countries do not apply the pensions test and all elderly above the eligibility age are effectively included in the program.

In Lesotho, the Public Officers' Defined Contribution Pension Fund—civil service pension scheme—accounts for the largest pension scheme in the country. The Public Officers' Defined Contribution Pension Fund was created through an act of Parliament in 2008; the reform converted the system from a PAYG DB to a DC system. The fairly recent establishment of the DC scheme helps to explain the very low coverage[10] of the elderly of less than 1/10 of a percent in 2015. During the same year the fund had 36 thousand contributors, or 4.1 percent of the labor force. Botswana and South Sudan also fall into the category of countries where there is only a civil service pension scheme for public sector employees and a non-contributory old age benefit. South Africa, Namibia, Botswana, and Lesotho also have significant non-contributory pension programs for the elderly. Namibia and Botswana have a universal pension, whereas South Africa and Lesotho provide means-tested and pension-tested benefits respectively.

Civil service pension schemes in SAA are mostly defined benefit, financed on a pay-as-you-go basis. Botswana, Lesotho, and Nigeria[11] have funded DC schemes; Kenya is introducing a DC scheme; in 2013, Mauritius introduced a DC scheme for new entrants to civil service; Swaziland has a funded defined benefit scheme for civil servants; Ghana has a hybrid of DB and a DC scheme. The majority of civil service pension schemes in SSA are contributory schemes, however, nine countries (Burundi, Cameroon, Congo, Dem. Rep., Gambia, Malawi, Mozambique, Uganda, Mauritius, and Angola) fully or partially finance civil service pensions directly from the government budget. It is important to note that in the case of civil service pension schemes where the government is also the employer, financing the employer share of the pension contribution rate is a direct cost for the government. Having a specified contribution rate may improve transparency and promote long term financial planning, however, financing civil service pensions is a direct fiscal obligation for the government—with our without a specified contribution rate.

The recommended design for a civil service pension system is often to integrate it with the national system (Palacios & Whitehouse, 2006)**.** Integration typically allows for better labor

[10] Overall elderly pension coverage is higher as there are individuals drawing pensions under the previous, now closed system.
[11] As discussed earlier, Nigeria's civil service scheme is integrated with the national scheme.

market mobility (as it provides for increased portability of pension rights) and may help to avoid some of the inequities observed between civil service and less generous private sector schemes in the region. International experience suggests that either fully, or at least partially integrated pension systems are strongly preferred over maintaining a dualism in old-age income provision between public and private sector.

Table 2: Design of Civil Service Pension Schemes

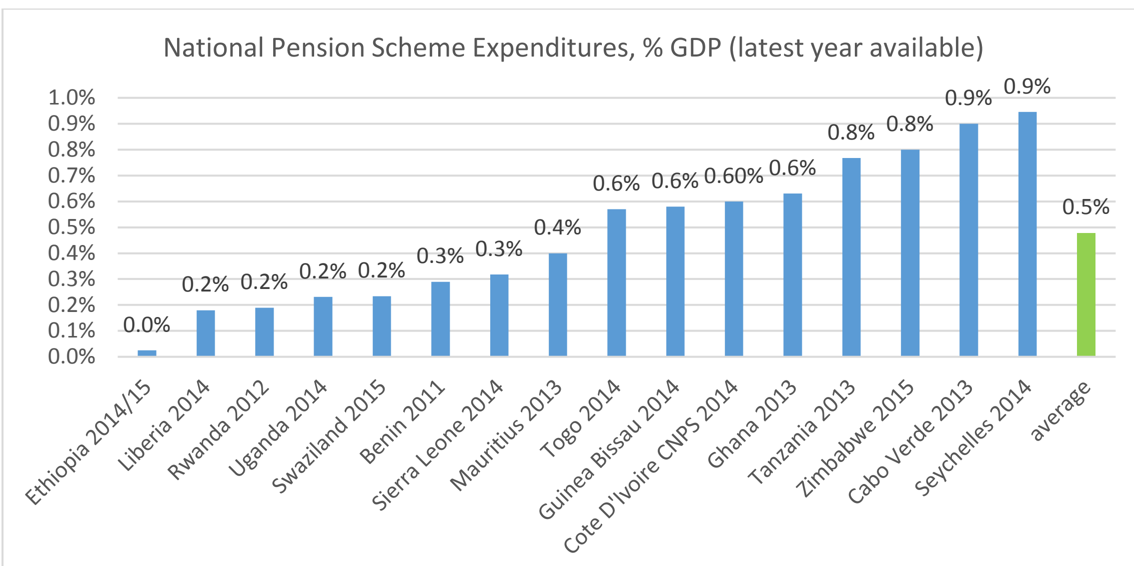
				Contribution Rate and Funding			
	Country	**Structure of Civil Service Pension Scheme**	**Design of Civil Service Scheme (if separate, otherwise national)**	**Employer**	**Employee**	**Total**	**National Pension Scheme in Place**
1	Botswana	Separate	FDC	15%	5%	20%	
2	Cabo Verde	Integrated	PAYG DB	7%	3%	10%	X
3	Guinea Bissau	Separate	PAYG DB	14%	8%	22%	X
4	Kenya	Separate	DC (2012 conversion from DB)	15%	8%	23%	X
5	Lesotho	Separate	FDC (recent move from PAYG D	5%	5%	10%	
6	Namibia	Separate	FDB	16%	7%	23%	
7	Rwanda	Integrated	PAYG DB	3%	3%	6%	X
8	Seychelles	Integrated	PAYG DB	2%	2%	4%	X
9	Tanzania	Separate	PAYG DB	15%	5%	20%	X
10	Uganda	Separate	PAYG DB	Budget	Budget	Budget	X
11	Zambia	Integrated	PAYG DB	7%	7%	15%	X
12	Zimbabwe	Separate	PAYG DB	5%-7%	0%	5%-7%	X
13	Ghana	Integrated	Hybrid	13%	6%	19%	X
14	Mauritius	Separate	PAYG DB	Budget	6%		X
15	Angola	Separate	PAYG DB	Budget	7%		X
16	Benin	Separate	PAYG DB	14%	6%	20%	X
17	Burkina Faso	Separate	PAYG DB	14%	8%	22%	X
18	Burundi	Separate	PAYG DB	Budget	Budget	Budget	X
19	Cameroon	Separate	PAYG DB	Budget	10%		X
20	Central African Republic	Integrated	PAYG DB	4%	3%	7%	X
21	Chad	Integrated	PAYG DB	5%	4%	9%	X
22	Congo, Dem. Rep.	Separate	PAYG DB	Budget	Budget	Budget	X
23	Congo, Rep.	Separate	PAYG DB	NA	NA		X
24	Cote d'Ivoire	Separate	PAYG DB	17%	8%	25%	X
25	Ethiopia	Separate	PAYG DB	11%	7%	18%	X
26	Gambia, The	Separate	PAYG DB	Budget			X
27	Guinea	Separate	PAYG DB	NA	NA		X
28	Liberia	Separate	PAYG DB	NA	NA		X
29	Madagascar	Separate	PAYG DB	16%	4%	20%/1	X
30	Malawi	Separate	PAYG DB	Budget	Budget	Budget	X
31	Mali	Separate	PAYG DB	12%	8%	20%	X
32	Mauritania	Separate	PAYG DB	12%	6%	18%	X
33	Mozambique	Separate	PAYG DB	Budget	7%		X
34	Niger	Separate	PAYG DB	14%	6%	20%	X
35	Nigeria	Integrated	FDC	NA	NA	NA	X
36	Sao Tome and Principe	Integrated	PAYG DB	6%	4%	10%	X
37	Senegal	Separate	PAYG DB	23%	12%	35%	X
38	Sierra Leone	Integrated	PAYG DB	NA	NA	NA	X
39	South Africa	Separate	FDB	13%	8%	21%	
40	South Sudan	Separate	PAYG DB	11%	5%	16%	
41	Sudan	Separate	PAYG DB	NA	NA	NA	X
42	Swaziland	Separate	FDB	15%	5%	20%	X
43	Togo	Separate	PAYG DB	20%	7%	27%	X
44	Eritrea	Separate		11%	6%	18%	

III. Performance of national and civil service pension systems

Fiscal performance

Based on the countries included in the analysis, spending on national pension systems in SSA is low as a share of GDP, amounting to an average of 0.5 percent. Spending on national pensions in SSA is currently low primarily because of two reasons: *(1) the small share of elderly in total population* and *(2) and even smaller share of elderly in receipt of a national pension*. The small number of pensioners also results from the fact that in a number of countries the national pension funds were set up fairly recently. For example, all pension funds in Tanzania (except for PPF) were converted from DC to PAYG DB between 1999 and 2003. Therefore, the *relative immaturity of pension systems* is also a contributing factor for the low levels of pension spending currently observed in the region.

Figure 1: Pension Expenditures on National Pension Scheme as a Share of GDP



Source: Administrative data from respective countries.

The majority of national contributory pension schemes in SSA are fairly immature and currently enjoy fiscal surpluses as the ratio of eligible beneficiaries to system contributors is low. As pension systems begin to mature, the ratio of pension system beneficiaries to pension system contributors—also known as a system dependency rate—increases, increasing the fiscal burden on each contributor to finance pension benefits (in the case of pay-as-you-go financed systems).

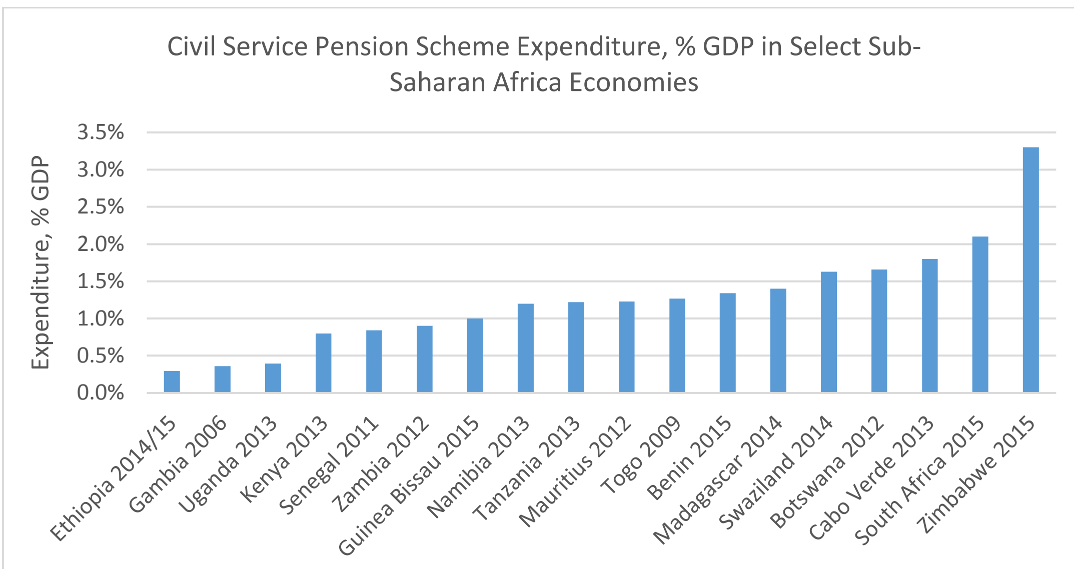
It is important to note that in the beginning—when pension systems are immature—no matter how generous or actuarially unbalanced they may be, they typically generate surpluses. As pension systems mature, these surpluses fall and can be transformed into deficits if the parameters are misaligned. Evaluating the long term financing needs of pension systems under baseline and alternative reform scenarios could help countries adjust system parameters accordingly and also improve long term financial planning overall. While countries may be able to afford the generous benefits now, they may become unaffordable in the future as the ratio of pensioners to contributors increases.

Civil service schemes, on the other hand, are generally much more mature and their demographic profiles are often more advanced (i.e., older median age) than the national population. The civil service in many SSA countries expanded and grew in the 1960s and 1970s. While some increases in civil service positions, such as in education, are often tied to growth in the population, in many other cases, the size of the civil service is affected by other factors, such as budgetary expansions and slowdowns. After an initial ramping up of the civil service, most countries have slowed the growth of the civil service due to budgetary pressures. And the life expectancy of civil servants who have higher income and are better educated than the general population is often much higher than the general population. With fewer, young new entrants, and aging of the existing civil servants, the age structure of participants often looks more like that of an aging country than of a young country, with all the fiscal problems that older countries face in financing pensions.

In the majority of the countries where data are available, civil service pension schemes tend to be more expensive than national pension schemes. For example, in Mauritius, national pension scheme which is primarily for private sector workers costs 0.4 percent of GDP, whereas civil service pension costs exceed 1 percent of GDP. This also holds true for Tanzania, Uganda, Ethiopia, Benin, and Togo. Even though spending on both national and civil service pension schemes in SSA may not appear high relative to spending in other countries, it is high relative to the number of people receiving pensions—especially when looking at civil service pension schemes. The relatively high cost of civil service pensions can be attributed to a number of factors including: (i) generosity of benefits; and (ii) long duration of benefits, partly attributable to low

retirement ages and early retirement provision. Generosity of benefits can arise from a number of parameter choices of a pension scheme: (i) the accrual rate, the rate at which the benefit entitlements build up for each year of service; (ii) the averaging period for wages included in the pensionable wage; (iii) indexation of the pension post-retirement; and (iv) commutation options.[12] The generosity of the civil service schemes is important since the civil service schemes in a country often guide the expectations for what private employers should be expected to provide. It is also important because it results in an increasing fiscal burden, potentially crowding out spending on other key areas essential for human development and poverty reduction such as health, education, and safety nets.

Figure 2: Pension Expenditures on Civil Service Pension Scheme as a Share of GDP



[13]

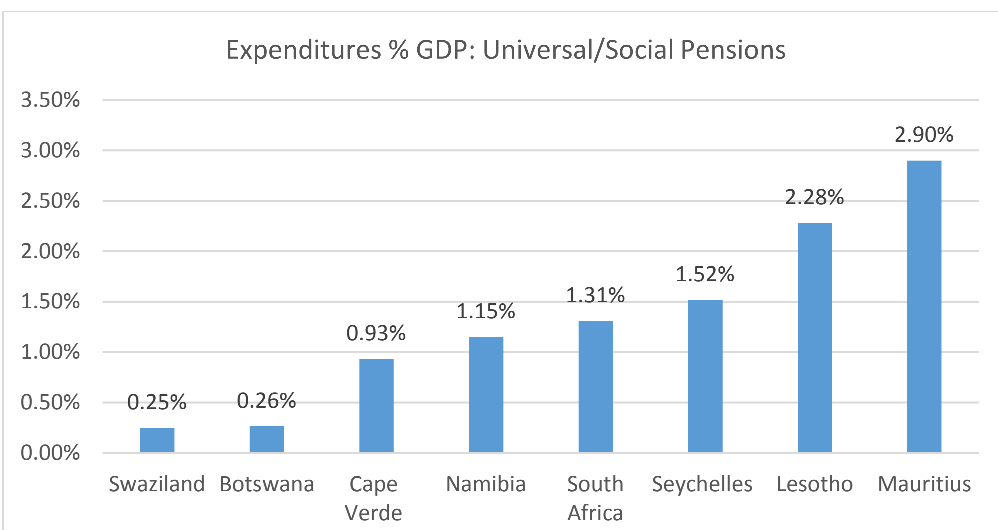
Source: Administrative data from respective countries.

[12] Commutation in the pension context occurs where a retiree surrenders part of his or her rights to receive a pension in the form of a future income stream in exchange for receiving an immediate lump sum payment. Commutation rate (factor) defines the relationship between the lump sum payment received and the future income stream foregone. A rate of 10:1 means that a person commuting would receive $10 now for every $1 of future annual income foregone. An actuary normally calculates the commutation rate using life expectancy tables, pension indexation rules and expected interest rates.

[13] Civil Service Pension Fund total program expenditure in Zimbabwe was US$ 477,600,000 in 2015. GDP for 2015 was 14.269 billion US dollars; the source for the GDP data is International Monetary Fund, World Economic Outlook Database, April 2016.

Spending on non-contributory elderly assistance programs in SSA varies between countries and largely depends on the level of the benefits, eligibility age and the size of the elderly population. In 2013, Mauritius spent 2.9 percent of GDP on the universal basic pension program which provides a pension to everyone above age 60 (Mauritius is the oldest country demographically in the region, see Figure 15). Seychelles and Lesotho also allocated a comparatively large share of national income to non-contributory elderly assistance benefits, 1.5 percent and 2.28 percent respectively (Seychelles is the second oldest country in the region whereas Lesotho is the 7th). Nigeria, Kenya, and Uganda have non-contributory pilot pension programs which have not yet been scaled-up for implementation on a national scale. South Africa has a means-tested old age pension paid from age 60 which covers a significant share of the eligible elderly. Even though non-contributory pension programs play an important role in alleviating old age poverty, they typically do so at a substantial cost. Even now, when Africa is still young and the share of population over the age of 60 in total population is quite small – resulting in a small pool of eligible social pension beneficiaries, non-contributory pension costs already range between 1 and 3 percent of GDP in six out of the eight countries with established social pension schemes.

Figure 3: Spending on Non-contributory Pensions as a Share of GDP



Source: (Pension Watch, 2016), Administrative Data, Statistics Mauritius

Elderly coverage

While pension spending in Africa may not appear high relative to spending in other countries (OECD countries spend on average of 9 percent of GDP on national pensions),[14] spending is high relative to the numbers of pension system beneficiaries. Generally, the share of elderly in receipt of a contributory pension is very low. On the other hand, the share is high in countries with large social pension schemes (Figure 4 and Figure 5).

National pension systems in SSA are accessible to a very narrow share of the elderly population and as a result come at a relatively low cost. First, looking at the elderly coverage of the national pension system, a few countries stand out namely Mauritius, Seychelles, and Cabo Verde for having achieved markedly higher coverage rates in their national pension systems.[15] However, in the majority of the countries, less than 10 percent of the population above age 60—the prevailing retirement age in the region—is in receipt of a national pension. Currently, the footprint of national pension systems in SSA is low—they are relatively inexpensive, but also only cover a very narrow percentage of the elderly population. As such, one of the biggest challenges facing SSA national pension systems remains coverage expansion. The reasons behind low pension coverage in the region are many. Limited to no capacity to save due to low incomes and the large size of the informal labor market rank towards the top of the long list of potential impediments to coverage expansion.

A set of countries have non-contributory social pension programs in place which are either universal or means/pensions-tested. Universal pension eligibility criteria are not contingent on prior contributions and are therefore accessible to a much broader share of the elderly population. Eight countries as shown in Table 3 have national social pension programs—Botswana, Namibia, Swaziland, Mauritius, Lesotho, South Africa, Cape Verde, and Seychelles. Generally, pension coverage of the elderly population in the countries with significant non-

[14] OECD Pensions at a Glance 2015: Between 2010 and 2015, on average, OECD countries spent 9 percent of their national incomes on public pensions.

[15] Mauritius, Seychelles, Cabo Verde, and Botswana also have significant non-contributory pension programs in place which further contribute to higher pension coverage rates among the elderly.

contributory pension programs tends to be markedly higher as compared to the countries without non-contributory old age schemes.

Table 3: Non-contributory Pension Programs in Select SSA Countries

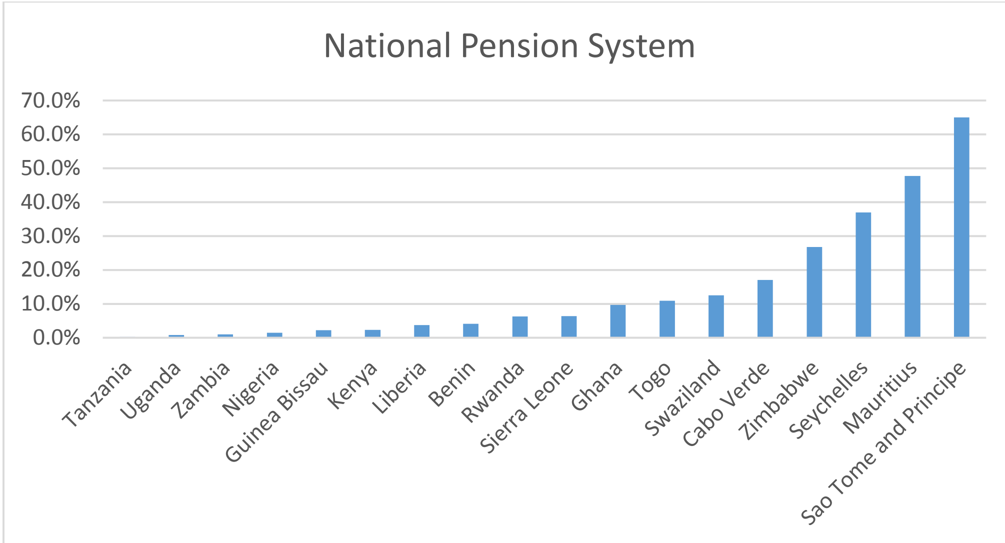
Country	Design[16]	Beneficiaries, % Population 60+	Spending, % GDP
Botswana	Universal old age pension paid from age 65	88%	0.26%
Lesotho	Pensions-tested benefit paid from age 70	62%	2.28%
Mauritius	universal basic pension paid from age 60	103%	2.9%
Swaziland	pensions-tested old age grant paid from age 60	77%	0.25%
Cape Verde	Means-tested	68%	0.93%
Seychelles	Universal	88%	1.52%
Namibia	Universal paid from age 60	114%	1.15%
South Africa	Means-tested	74%	1.31%

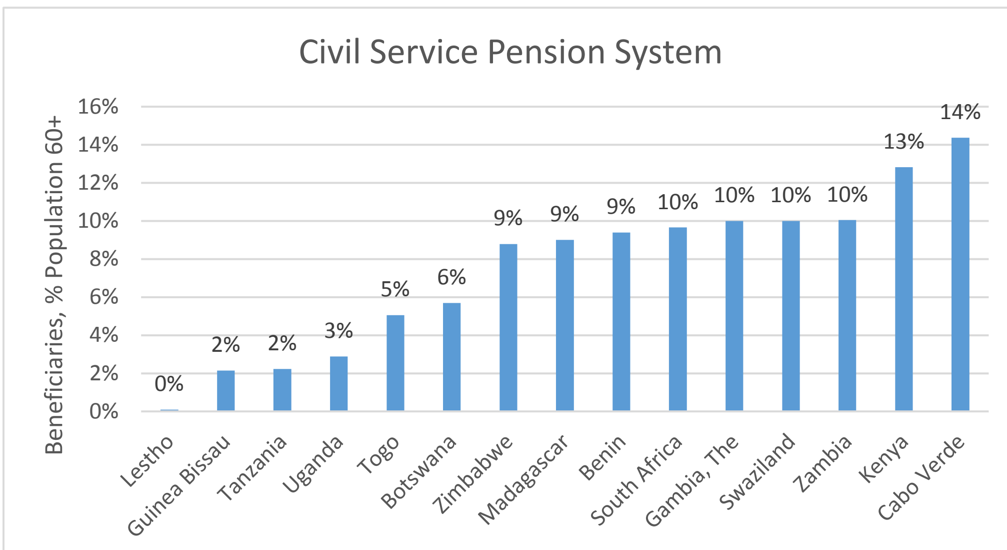
Source: (Pension Watch, 2016); Administrative data

Elderly coverage of civil service pension schemes is even lower, though absorbing a markedly larger share of GDP than national pension systems. For example, in Uganda, currently 0.4 percent of GDP is being spent on civil service pensions—but this is being spent on only 2.5 percent of the elderly population. Botswana spends 1.7 percent of GDP on civil service pensions which reach only 6 percent of the population over the age of 65. The relatively high cost of civil service pensions (as a share of national income), combined with low coverage of the elderly signals that these scheme are providing pensions that are a very high, especially relative to income per capita. Aside from equity and fiscal sustainability considerations, the generosity of the civil service schemes is also important since the civil service schemes in a country often guide the expectations for what private employers should be expected to provide.

[16] Lesotho and Swaziland perform a pensions test to establish eligibility, though in practice the pensions test may not be actually performed.

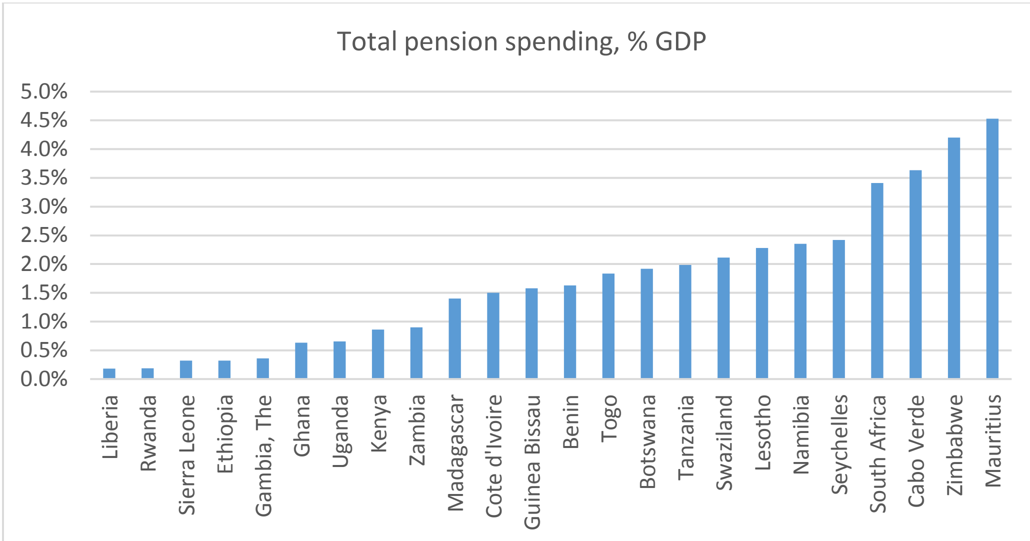
Figure 4: National and Civil Service Pension Coverage of the Population over the Age of 60

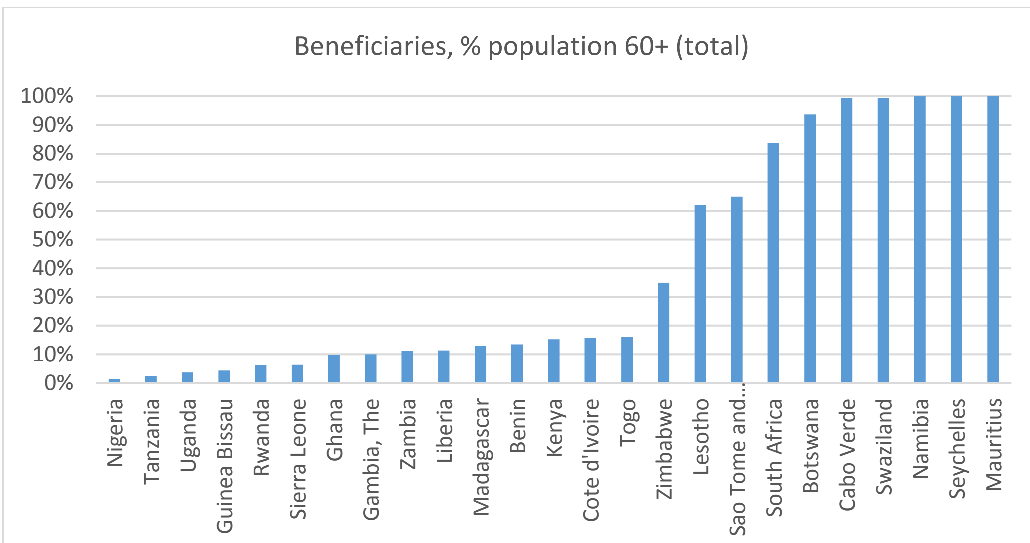




Source: Administrative data from respective countries.

Figure 5: Total Pension Spending as a Share of GDP vs. Total Pension Coverage of the Population 60+





Source: Administrative data from respective countries.

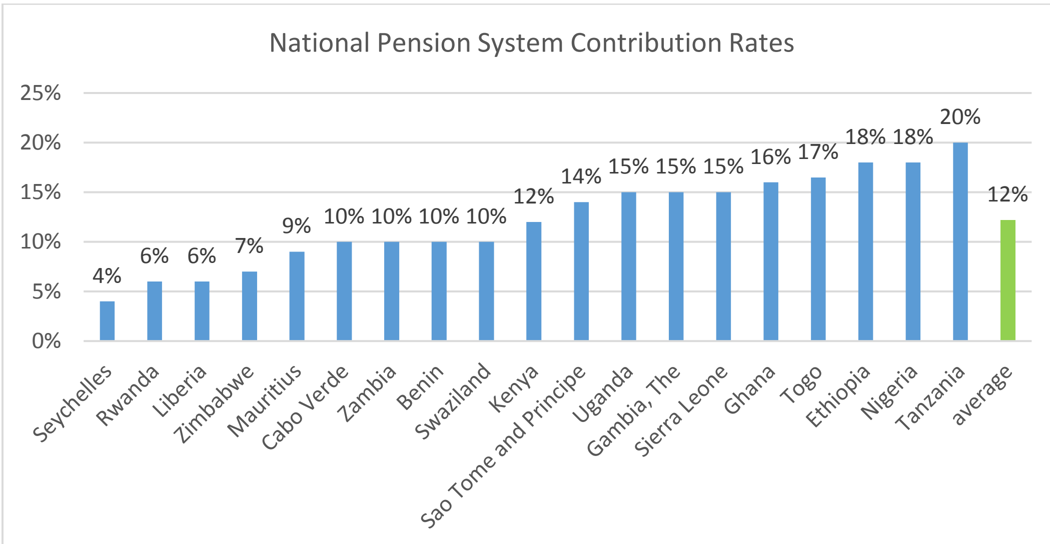
IV. Design parameters and characteristics of national and civil service pension systems

Contribution rates

All national, mandatory contributory pension schemes collect contributions from participants in order to finance system expenditures. The average total contribution rate based on the countries covered (employee and employer) is 12 percent of wages. This is low relative to other regions and is partly explained by the immaturity of most pension schemes which reduces

financing needs on a pay-as-you-go basis. Some are already relatively high. The average contribution rate across OECD converges around 18 percent while Ghana, Togo, Ethiopia, Sierra Leone, Tanzania, and Uganda all have rates of at least 15 percent (Figure 6).

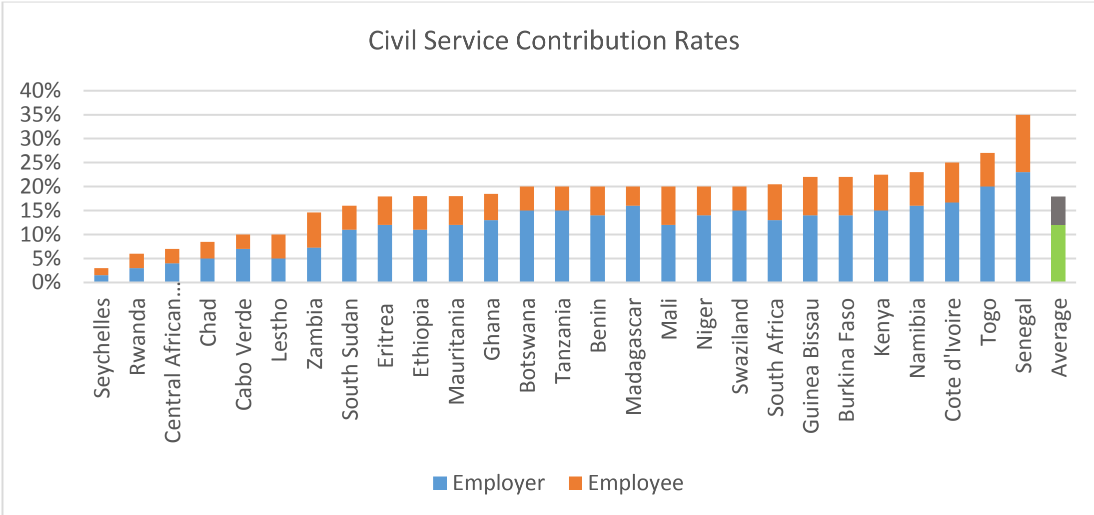
Figure 6: National Pension System Contribution Rates



Source: Administrative data from respective countries.

Civil service pension schemes have considerably higher contribution rates in many cases. In fact, in many of the SSA countries, civil service contribution rates approach levels seen in demographically much older countries. This trend is also reflective of the fact that many civil service pension schemes in SSA are already quite mature and as a result have higher financing needs (having been set up decades before the national pension systems). As mentioned above, the demographic composition of civil service schemes can be much older than the demographic profile of the overall population. The already high contribution rates are of concern because there may not be much room to further raise contributions rates in the future when systems become even more mature. It is also important to mention that in a civil service system, as compared to a national system, raising employer contribution rates essentially raises the government costs. Whether the government faces additional deficit to finance or higher contribution costs is immaterial from the government's perspective. The only way a higher contribution rate would improve government finances is if it is fully paid for by employees, a measure which would result in a decline in their net salaries.

Figure 7: Civil Service Pension Scheme Contribution Rates



Source: Administrative data from respective countries.

Accrual rates

In the countries where data is available, national pension benefit formulas provide an average 2 percent of individual's last wage per year of contributions. This parameter is also known as an accrual rate and it is quite high compared to international standards—twice as high as the OECD average, and especially high considering that the average national pension contribution rate is 12 percent of wage. As pension schemes mature, the average length of service should be expected to reach at least 30-35 years, as is the experience in medium to high income countries. A simple calculation of multiplying the accrual rate by the number of covered years can expose that on average SSA economies are promising a replacement rate of 60 percent. Furthermore, longer careers of 35 or more years could result in unsustainably high benefit levels for many countries over the long run. It is important to note that in many countries, contribution histories can be significantly shorter, resulting it markedly lower pensions than would be expected if a person contributed for 30 or more years.

The vast majority of SSA countries have an accrual rate that is higher in the first years of employment and lower during the later years of employment. The national pension scheme in Tanzania has an accrual rate that is higher for the first 15 years; in Ethiopia—both national and civil service pension schemes—the accrual rate during the first 10 years is more than twice the

accrual rate applied after the first 10 years; the pension system in Ghana also provides for a higher accrual rate during the first 15 years of employment. Most OECD countries have moved to linear accrual rates given the potential distortions in behavior that such non-linear accrual schedules may cause.

Against the backdrop of changing demographics, the key question to ask is what governments can afford to provide in benefits in the longer run. In defined benefit plans, changing population structure, characterized by aging, will, over time, cause pension system dependency rates to increase. If one assumes that in the long run there will be about three workers for every pensioner and, if you expect people to work from age 20 to age 65 (45 year career span), a rate of 15 percent average wage can cover a pension of 45 percent of average wage or a 1 percent accrual rate. Therefore, it is important to think about the benefit structure today as not to overpromise when revenues are flush because reducing benefits later on is much more difficult.

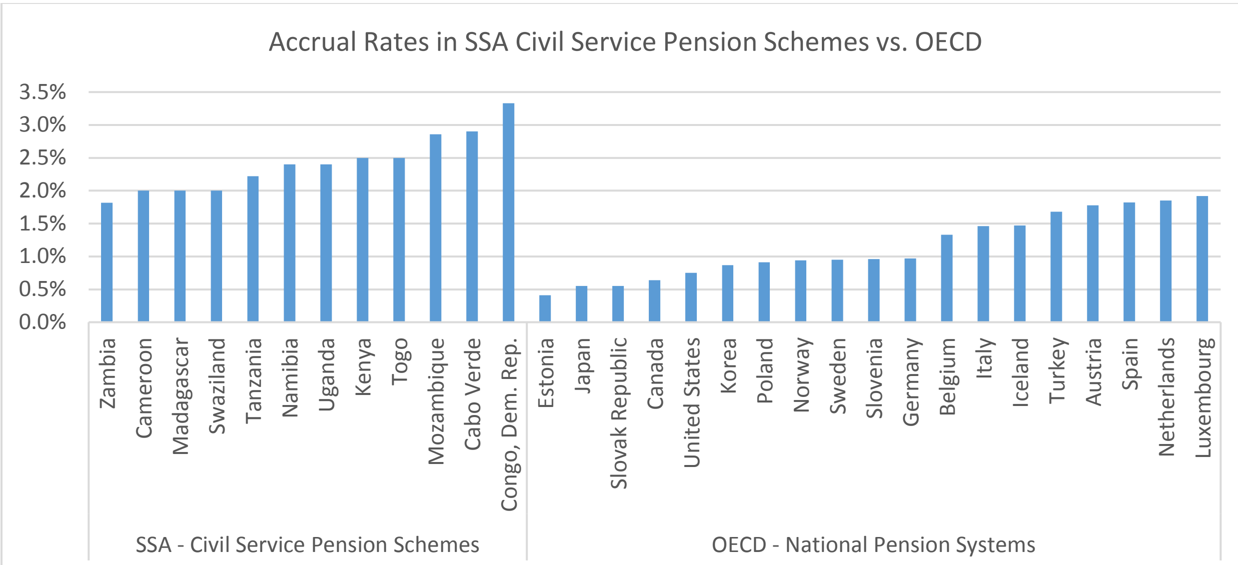
Figure 8: National Pension System Accrual Rates and Simulated Replacement Rates with 30 years of contributions

Country	National Pension System Accrual Rates	Simulated Replacement Rate After 30 Years
Cabo Verde	2.0%	60%
Guinea Bissau	2.8%	84%
Rwanda	2.0%	60%
Tanzania	2 %(15yrs.) + 1.5%	53%
Zambia	1.3%	40%
Ghana	2.5 %(15yrs.) + 1.1%	54%
Benin	30% (15 yrs.) + 2%	60%
Burkina Faso	2.0%	60%
Cameroon	2.0%	60%
Central African Republic	1.3%	40%
Chad	2.0%	60%
Congo, Dem. Rep.	1.7%	50%
Ethiopia	30% (10 yrs.) + 1.25%	55%
Mozambique	1.7%	51%
Sao Tome and Principe	2.5%	75%
Sierra Leone	2.0%	60%
Togo	1.3%	40%
Seychelles	1.8%	53%
average	1.9%	57%

Source: Administrative data from respective countries.

Civil service pension scheme accrual rates are even higher, averaging about 2.5 percent. An accrual rate of 2 percent, assuming a full-career, translates into very high replacement rates especially when compared to lifetime average earnings.

Figure 9: Civil Service Pension Scheme Accrual Rates



Source: Administrative data from respective countries; OECD Pensions at a Glance 2015

Wage base for pension calculation

The wage base—the income measure on which accrual rates are applied—in both national and civil service pension schemes in SSA tends to include only the final few years of employment. The wage base is an important parameter which has a significant impact on the generosity of the pension benefit. OECD countries have almost universally moved to long or even lifetime earnings bases where past earnings are revalued to take into account changes in the average wage of all workers. This approach is more appropriate in terms of the consumption smoothing objective, avoids inequities between workers with different age-earnings profiles and reduces the incentive for gaming the system by inflating salaries just prior to retirement. The issue of equity is best illustrated if we consider the issue that different workers have different salary growth paths. Higher income earners tend to have steeper age earnings profiles, so their pensionable income ends up being much higher than the income on which they have paid contributions throughout their entire career. As a result, there is a transfer in the system to higher income earners.

Conversely, lower income individuals typically experience flatter age-earnings profiles so their pensionable income is about the same as the income on which they've paid contributions. As a result, lower income earners may receive a lower return compared to higher income earners. On top of that, lower income earners also tend to have shorter life expectancy, drawing a pension for fewer years. Applying accrual rates to final three or five years of income could also induce individuals or employers to seek a drastic increase in income in those final years in order to secure a higher pension, a practice which can be extremely expensive for the pension system. Basing civil servant pensions on final salary can be particularly expensive, since civil servants often receive significant promotions at the end of their career and face a steadily increasing wage based on seniority. Private sector salaries, by contrast, often peak earlier in the career around the late 40s or early 50s and then either hold steady or decline slightly. As a result, the overpayment in benefits relative to average contributions tends to be much higher for civil servants. Additionally, in many cases, civil servants receive promotions and large salary increases just before retirement, which inflate their pensionable salaries, but result in huge costs to the pension system.

Figure 10: Wage Base in National and Civil Service Pension Schemes in SSA

pension scheme	country	wage base for pension calculation
national	Benin	final 5
both national and civil service	Ethiopia	final 3
civil service	Swaziland	final salary
integrated	Seychelles	last 5
civil service	Mauritius	last 5
integrated	Cabo Verde	final salary
civil service	Madagascar	final salary
national	Sierra Leone	best 5 avg.
both national and civil service	Togo	final salary
civil service	Uganda	final salary
national	Mozambique	final salary
national	Ghana	best 3 avg.
civil service	Tanzania	final salary
national	Tanzania	best 5 avg.
civil service	Namibia	final salary
civil service	Zambia	final salary
civil service	Liberia	final salary
national	Zimbabwe	final salary

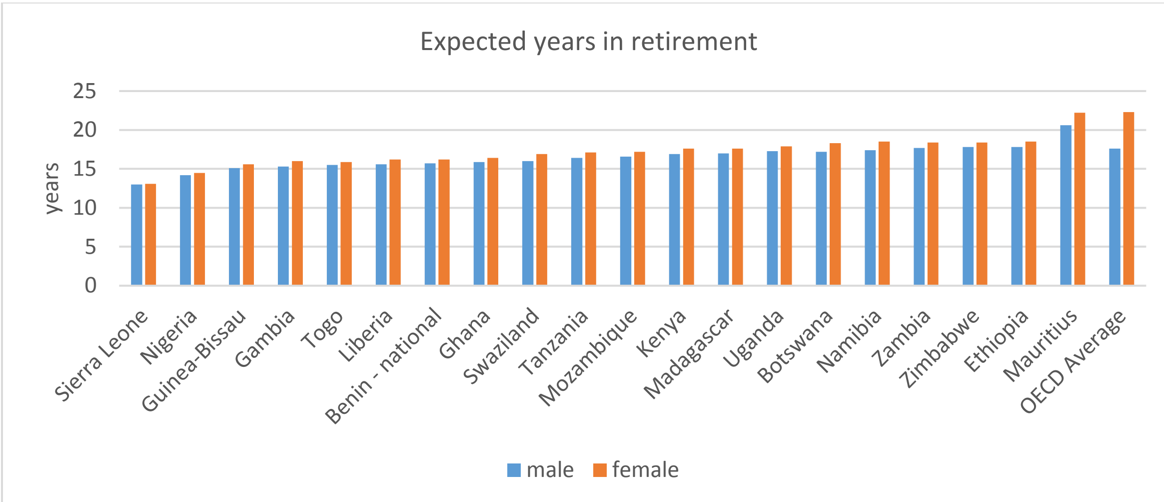
Source: Administrative data from respective countries.

Retirement ages

Retirement ages in SSA rank on the low side of the international spectrum, with the majority of countries having an official retirement age of 60 or lower. Additionally, in a number of countries—including Gambia, Uganda, and Botswana—there are early retirement provisions which permit retirement as early as age 45. Ghana, Tanzania, and Ethiopia provide the option for early retirement from age 55. On the other hand, the average OECD retirement age is 64 for men and 63 for women. One may argue that since African countries have lower life expectancies than higher income countries, they should also have lower retirement ages. Although life expectancy at birth across the majority of SSA countries is considerably lower than the OECD average, when comparing life expectancy ate age 60—which is the metric one should use when working with pension systems—the difference between the two sets of countries is considerably smaller. Taking the analysis one step further, one could also safely assume that pension system contributors—typically formal workers who tend to have higher wages (better healthcare, safer jobs)—can have even higher life expectancy than the general population, thus justifying an ever higher retirement age and smaller difference between African and OECD countries. Currently, the retirement gap between the two sets of countries is far greater than the gap in life expectancy at age 60, which suggest that retirement ages across a number of SSA countries probably need to start rising, or early retirement needs to be reduced to enable average effective[17] retirement age to increase.

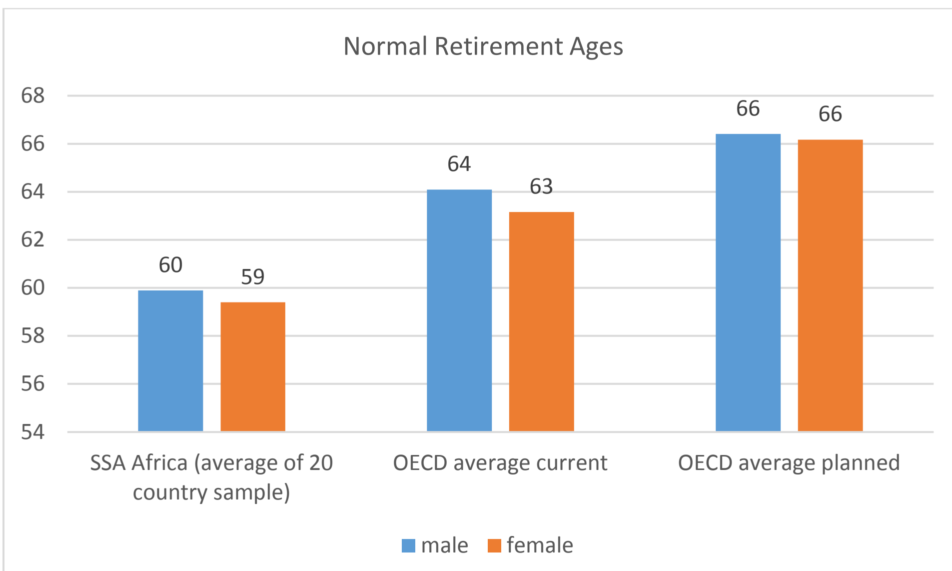
[17] Age at which older workers withdraw from the labor force.

Figure 11: Expected Years in Retirement, Expressed as Life Expectancy at Retirement Age, in Select SSA Countries and the OECD



Source: Administrative Data, OECD Statistics

Figure 12: Average Retirement Ages across SSA and the OECD



Indexation

The experience in SSA has been that most countries adjust pensions in payment to either growth in wages or on an-hoc basis. Indexation post-retirement aims to preserve the relative value of the pension benefit throughout retirement. Most OECD countries have moved to price

indexation in order to reduce spending while protecting the real value of pensions. Wage or ad hoc indexation also subject pensioners in specific cohorts to volatility in the real value of their pensions. International best practices suggest that the best approach is to uprate pensions by increases in prices only, with the logic that the individual's purchasing power should be maintained throughout retirement. Ethiopia and Togo (national system) do not index pensions in payment. While indexing pensions to wage growth could prove expensive, a complete lack of indexing of pensions in payment could put elderly at an increased risk of old age poverty. The lack of any indexation measure would result in a decline in the real value of the pension benefit overtime.

Figure 13: Indexation Measures

Country	National	Civil Service
Cabo Verde	ad-hoc	ad-hoc
Kenya		inflation
Namibia		higher than inflation
Seychelles	inflation	
Tanzania	ad-hoc	ad-hoc
Uganda		wages
Zambia	wages	ad-hoc
Ghana	wages[18]	
Benin		wage
Ethiopia	none	none
Madagascar		ad-hoc
Sierra Leone	wages	
Togo	no indexation	wages
South Africa		at least 75% inflation
Sao Tome	inflation	

Source: Administrative data from respective countries

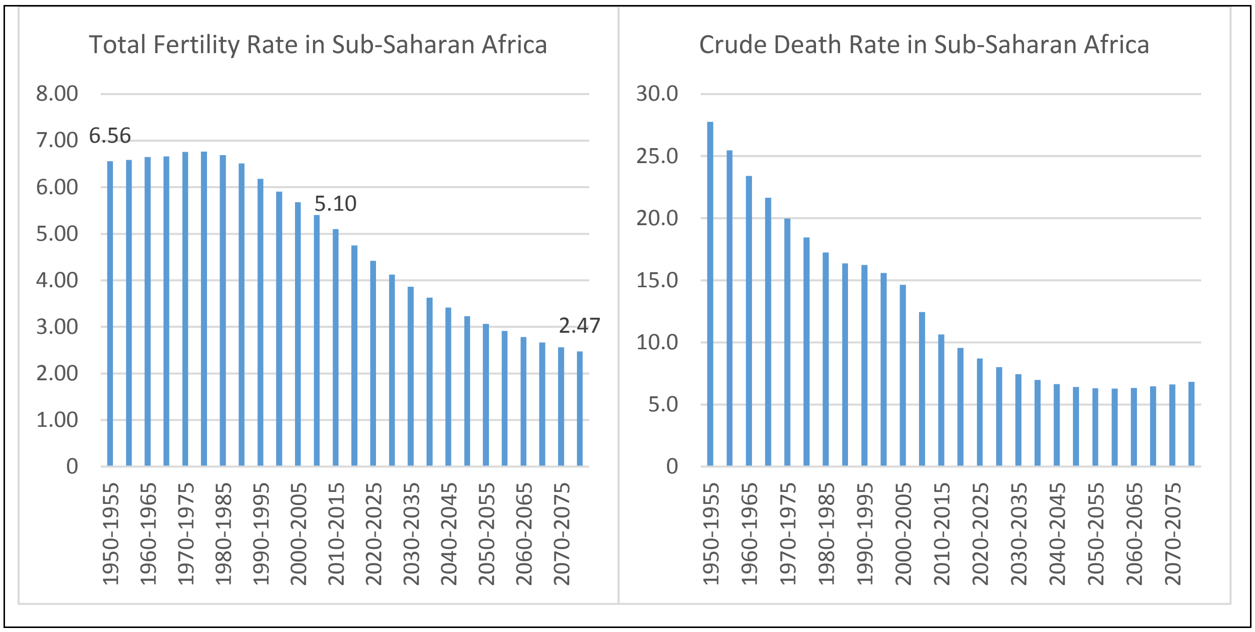
V. Demographics

Over the last six decades, Africa has gone through a demographic transition, moving from a period of high mortality and high fertility rates to one of lower mortality, though still high fertility rates. Historical fertility rates have declined from an average of 6.5 in 1950-1955 to 5.1

[18] In the case of Ghana, the national pension scheme indexation policies in practice tend to resemble much more of an ad hoc approach with wage-based as well as flat nominal uprates of pensions.

in the 2010-2015. Total Fertility Rate (TFR)[19] projections indicate that by 2080, the average TFR in Sub-Saharan Africa would decline to 2.4 births per woman. Between 1950 and 2015, TFRs in Sub-Saharan Africa decreased by 22 percent. In comparison, TFRs across high-income countries during the same period decreased 41 percent from 2.97 to 1.75. Over the coming three decades, TFRs in SSA are projected to further decrease by 28 percent, reaching 3.4 by 2040 while TFRs across high-income countries are projected to remain largely unchanged during the same period.

Figure 14: Historic and Projected Total Fertility and Crude Death Rates in Sub-Saharan Africa



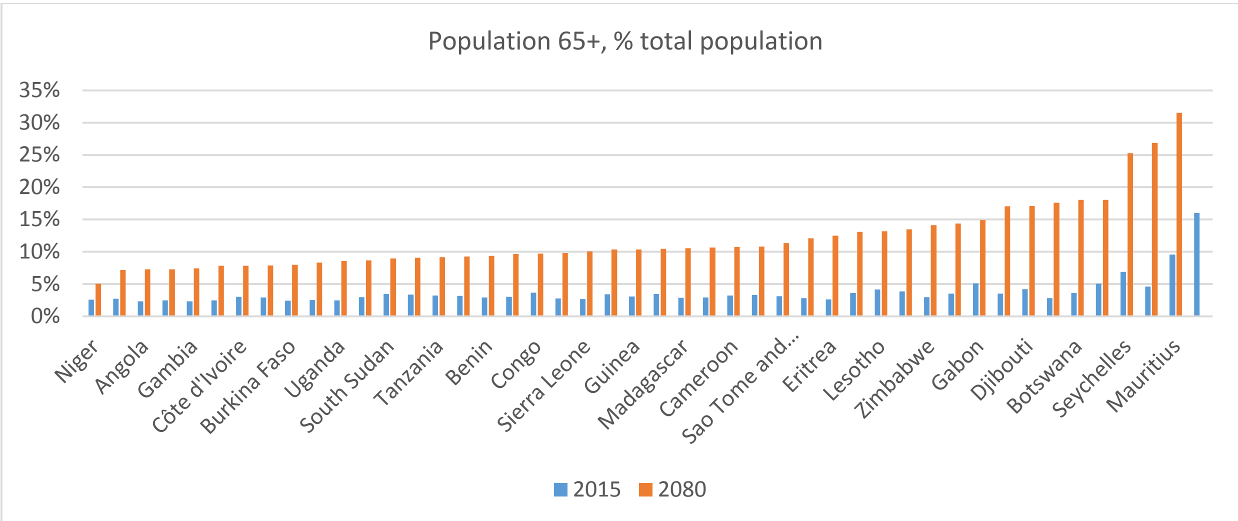
Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision

Child Dependency Ratios (CDR)[20] are projected to decrease at a faster pace than the growth in the Old-Age Dependency Ratio (OAD)[21] as the steep decline in fertility rates over the past few decades influences the age composition of the population. The result is a projected decline in the Total Dependency Ratio (TDR)[22] providing a "demographic dividend" which may afford an

[19] A basic indicator of the level of fertility, calculated by summing age-specific birth rates over all reproductive ages. It may be interpreted as the expected number of children a women who survives to the end of the reproductive age span will have during her lifetime if she experiences the given age-specific rates.
[20] The child dependency ratio is the ratio of the population aged 0-14 to the population aged 15-64.
[21] The old-age dependency ratio is the ratio of the population aged 65 years or over to the population aged 15-64.
[22] The total dependency ratio is the ratio of the sum of the population aged 0-14 and that aged 65+ to the population aged 15-64.

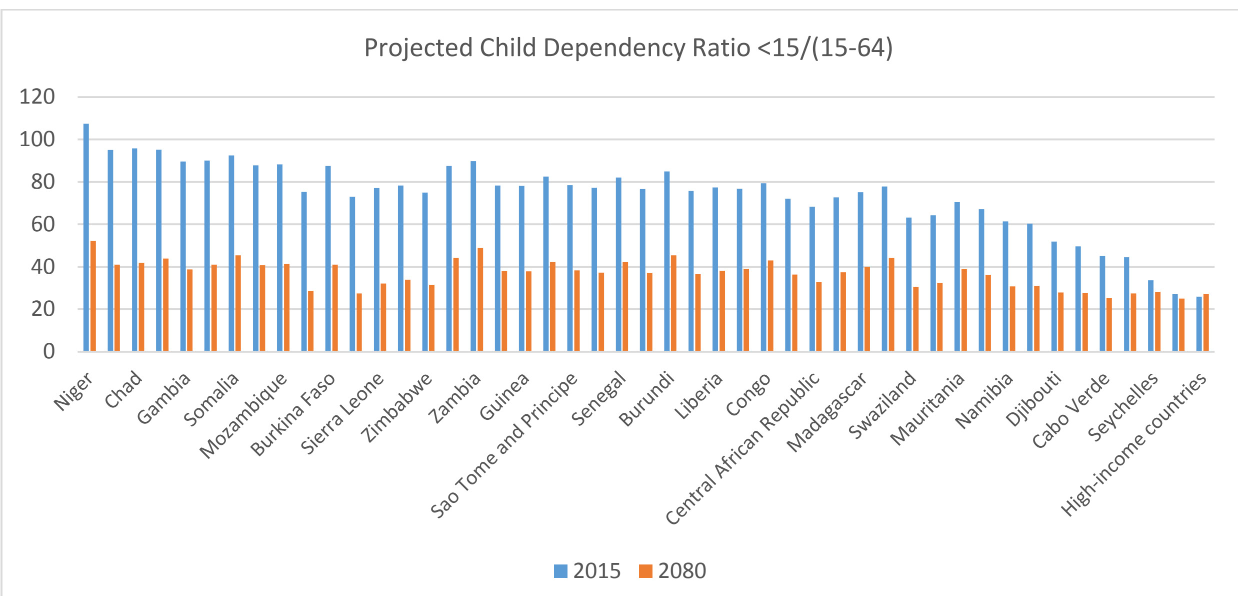
ideal opportunity for some countries to invest in more resilient social protection systems. According to UN Population Projections, Total Dependency Ratios (TDR) are expected to decline in the majority of Sub-Saharan Africa countries in the coming several decades.

Figure 15: Population over the Age of 65 as a Share in Total Population



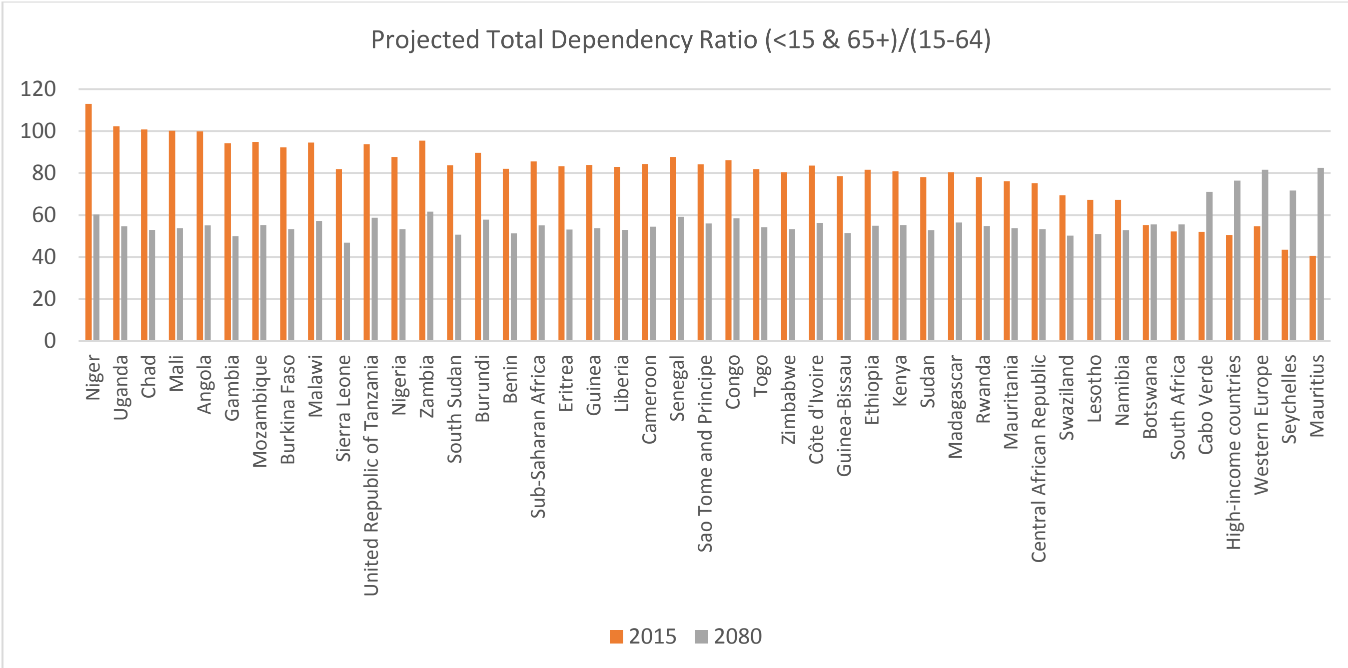
Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision.

Figure 16: Projected Child Dependency Ratio



Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision.

Figure 17: Projected Total Dependency Ratio



Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision

The share of the population over the age of 65 in total population is projected to increase on average four fold in Sub-Saharan Africa (Figure 15). Currently, the elderly account for about 3 percent of the population; by 2080 the elderly will compose on average 12 percent of the population. In some countries, including Seychelles, Cabo Verde, and Mauritius, the demographic shift will result in one fourth of the population being over the age of 65. Although elderly in SSA on average account for only 3 percent of the population, well below the OECD average of 16 percent, in the coming decades, about half of all SSA countries will approach a similar demographic composition to that of OECD countries today. The projected demographic change, driven by declines in fertility and increases in longevity, will mean that without improvements in the mechanisms for old-age income support that can reach the majority of the population, many SSA countries may be faced with increased rates of old-age poverty.

Demographic projections show that Africa's window to realize the benefits of this demographic transition will likely be open for a couple of more decades. However, the opportunity will not last forever and the region will need to act in order to translate these favorable demographic

trends into a demographic dividend. This argument is especially important when it comes to pension system reforms, which typically take several decades to fully materialize. Pension reforms are generally introduced in a way that current pensioners, as well as those individuals that are relatively close to retirement, remain unaffected by the reforms—the approach known as "grandfathering" of rights. Since pension reforms would typically only apply to younger cohorts, the full effects of a reformed pension system may only become visible several decades following the introduction of new parameters. That is why it is important to start thinking about pension reforms now, even though the majority of countries are still enjoying young demographics.

The projected growth in the 65 plus population will negatively affect the Old-Age Dependency ratio which is important for the fiscal sustainability of pension systems, particularly under defined-benefit pension systems financed on a pay-as-you-go basis (PAYG). On average, in 2015, there were 13 people of working-age for every person over the age of 65; by 2080, projections show there will only be five people of working-age for every elderly person. Worsening population dependency rates would likely translate into a decline in pension system contribution revenue and a simultaneous increase in pension expenditure—reflecting an increase in the number of elderly eligible for a pension. An unfavorable shift in pension system dependency rates—defined as the number of pension system beneficiaries to the number of pension system contributors—may result in a fiscal shortfall, particularly in the absence of commensurate reforms to account for the changing age structure of the covered population.

VI. Annex

Retirement Ages in National and Civil Service Pension Schemes in SSA

Country	Name of Scheme	Male	Female
Benin - national	Caisse Nationale de Sécurité Sociale (CNSS)	60	60
Benin - cs	FNRB	60	60
Nigeria - integrated	CPS (RSA Scheme)	60	60
Liberia - national	The National Pension Scheme (NPS)	60	60
Botswana - cs	Public Officers Pension Fund (BPOPF)	60	60
Cabo Verde - integrated	Instituto Nacional de Previdencia Social (INPS)	65	60
Madagascar - cs	CRCM and CPR	60	60
Sierra Leone - integrated	National Social Security and Insurance Trust	60	60
Togo - national	La Caisse Nationale de Sécurité Sociale (CNSS)	60	60
Guinea Bissau - national	National Insitute of Social Security (INSS)	60	60
Guinea Bissau -cs	Civil Service Pension Scheme	60	60
Uganda - cs	Public Service Pension Fund (PSPF)	60	60
Uganda - national	NSSF	55	55
Rwanda - cs	Pension and Occupational Hazards Scheme	55	55
Mauritius - national	National Pensions Scheme (NPS)	60	60
Mauritius - civil service	Civil Service Pension Scheme (CSPS)	65	65
The Gambia - cs	Public Service Pension Scheme (PSPS)	60	60
The Gambia - national	National Provident Fund (NPF)	60	60
Mozambique - national	INSS	60	55
Ghana - integrated	SSNIT	60	60
Tanzania - cs	PSPF	60	60
Tanzania - national	NSSF	60	60
Kenya - cs	CSPS	60	60
Kenya - national	NSSF	55	55
Seychelles - integrated	Seychelles Pension Fund	63	63
Ethiopia - cs	Public Servants Social Security Agency (PSSSA)	60	60
Ethiopia - national	Private Organization Employees Social Security Agency (POESSA)	60	60
Zambia - national	NAPSA	55	55
Zambia - cs	PSPF	55	55
Swaziland - cs	Public Service Pension Fund (PSPF)	60	60
Swaziland – national	Provident Fund	50	50
Sao Tome - national	National Institute of Social Security (INSS)	62	57
Namibia - cs	GIPF	60	60

Source: Administrative data from respective countries

Parameters of a Traditional Pension System

Parameters of a traditional pension system include:
Eligibility Conditions - Retirement age: Normal age at which people can retire. - Years of service: Minimum years of service required to qualify for a pension (for some occupations, the years of service awarded exceed the years actually worked).
Benefit Parameters - Accrual rate: Percentage of wage base earned per year of service. - Wage base: Wage on which pension benefits are calculated, typically average wage earned during a specified period of time. - Averaging period for wage base: Number of years included in the average wage on which the pension benefits are calculated. This can range from last salary to full-career average. - Valorization of past wages: Parameter used to revalue past wages when averaging to account for the fact that wages were earned at different points in time when the cost of living and economy-wide average wages differed from what exists at the time of retirement. This is typically the economy-wide average wage growth between the time the wages were earned and the time of retirement. - Indexation: Parameter that determines how pensions are increased after retirement. It is typically linked to inflation or wage growth or some combination of the two.
Contribution Rates Workers, their employers, and sometimes the government make contributions as a percentage of the net or gross wage. These contributions are typically subject to a ceiling and sometimes subject to a minimum as well.

Source: Schwarz, Anita M., Omar S. Arias. 2014. The Inverting Pyramid: Pension Systems Facing Demographic Challenges in Europe and Central Asia.

Glossary of Pension Terms

Accrual rate. The rate at which pension entitlement is built up relative to earnings per year of service in earnings-related schemes—for example, one-sixtieth of final salary.

Benefit rate. The ratio of the average pension to the average wage, which could be expressed as relative to the economy wide average wage or to the individual's specific average or final wage.

Commutation. Exchange of part of the annuity component of a pension for an immediate lump sum.

Defined benefit. A pension plan with a guarantee by the insurer or pension agency that a benefit based on a prescribed formula will be paid. Can be fully funded or unfunded and notional.

Defined contribution. A pension plan in which the periodic contribution is prescribed and the benefit depends on the contribution plus the investment return. Can be fully funded or notional and nonfinancial.

Full funding. The accumulation of pension reserves that total 100 percent of the present value of all pension liabilities owed to current members.

Funding. Accumulation of assets in advance to meet future pension liabilities.

Indexation. Increases in benefits by reference to an index, usually of prices, although in some cases of average earnings.

Means-tested benefit. A benefit that is paid only if the recipient's income falls below a certain level.

Occupational pension scheme. An arrangement by which an employer provides retirement benefits to employees.

Old-age dependency ratio. The ratio of older persons to working-age individuals. The old-age dependency ratio may refer to the number of persons over 60 divided by, for example, the number of persons ages 15–59, the number of persons over 60 divided by the number of persons ages 20–59, and so forth.

Pay-as-you-go. In its strictest sense, a method of financing whereby current outlays on pension benefits are paid out of current revenues from an earmarked tax, often a payroll tax.

Pension coverage rate. The number of workers actively contributing to a publicly mandated contributory or retirement scheme, divided by the estimated labor force or by the working age population.

Pensionable earnings. The portion of remuneration on which pension benefits and contributions are calculated.

Portability. The ability to transfer accrued pension rights between plans.

Provident fund. A fully funded, defined contribution scheme in which funds are managed by the public sector.

Replacement rate. The value of a pension as a proportion of a worker's wage during a base period, such as the last year or two before retirement or more, or the entire lifetime average wage. Also denotes the average pension of a group of pensioners as a proportion of the average wage of the group.

System dependency ratio. The ratio of persons receiving pensions from a certain pension scheme divided by the number of workers contributing to the same scheme in the same period.

System maturation. The process by which a pension system moves from being immature, with young workers contributing to the system, but with few benefits being paid out since the initial elderly have not contributed and thus are not eligible for benefits, to being mature, with the proportion of elderly receiving pensions relatively equivalent to their proportion of the population.

Universal flat pension. Pensions paid solely on the basis of age and citizenship, without regard to work or contribution records.

Valorization of earnings. A method of revaluing earnings by predetermined factors such as total or average wage growth to adjust for changes in prices, wage levels, or economic growth. In pay-as-you-go systems, pensions are usually based on some percentage of average wage. This

average wage is calculated over some period of time, ranging from full-career average to last salary. If the period for which earnings history enters into the benefit formula is longer than the last salary, the actual wages earned are usually revalued to adjust for these types of changes.

Vesting period. The minimum amount of time required to qualify for full and irrevocable ownership of pension benefits.

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Abstract

This paper summarizes key design characteristics and performance indicators of national and civil service pension schemes in Sub-Saharan Africa (SSA). It is intended to serve as a resource in pension reform efforts in the region. The paper delivers an up-to date assessment of the main design parameters, key performance metrics, and main challenges facing pension systems in SSA. The information provided in the paper aims to capture current trends in the region and benchmark performance and pension system design choices made by countries against international experience. Section I provides an overview of mandatory national pension systems in the region whereas Section II presents the key design features of civil service pension schemes. Section III analyzes the performance of both national and civil service pension schemes; particular attention is paid to the fiscal performance and equity of the pension schemes. Pension system design parameters of both national and civil service pension schemes are discussed in section IV. Section V aims to enhance the note by providing relevant demographic data and analysis.

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