National Social Security Fund

An adequate and sustainable pension scheme for the private sector

16th March 2018
Phnom Penh

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ABBREVIATIONS

CPI	Consumer price index
DB	Defined benefit
DC	Defined contribution
FDC	Fixed duration contract
GAP	General average premium
GDP	Gross domestic product
ILO	International Labour Organization
IMF	International Monetary Fund
KHR	Cambodian riel
MoLVT	Ministry of Labour and Vocational Training
MSE	Micro and small enterprises
NSSF	National Social Security Fund
NSSF-C	National Social Security Fund for Civil Servants
PAYG	Pay-as-you-go
UDC	Unlimited duration contract

EXECUTIVE SUMMARY

Pensions are essential to ensure rights, dignity and income security for older persons. The right to income security in old age includes the right to an adequate living for all elderly persons as the responsibility of the State, as per ILO Convention 102 (1952) on minimum requirements for social security. This Convention has guided a large number of countries when setting up and reforming their national pensions systems.

Despite their importance, pensions in many countries are accessible only to a minority, and many older persons can rely only on family support. According to the most recent World social protection report, 55.2 per cent of the elderly in Asia benefit from a pension. This falls behind the global percentage of 68 per cent, but shows important progress. Indeed, in recent decades, many countries in the region have made great efforts to expand the coverage of contributory pension schemes and to establish non-contributory pensions to guarantee basic income security in old age to all.

Today in Cambodia, for every elderly person aged 55 and above, there are six people aged 15–55. Within 50 years, there will be only 1.6 people aged 15–55 for every elderly person over 55. In the absence of a pension system, this will lead to an unbearable increase on the financial burden for families, many of which already live in a situation of financial vulnerability. This context can also put pressure on pension pay-as-you-go (PAYG) schemes, and shows the importance of appropriate long-term planning for pension systems.
As life expectancy continues to rise, more Cambodians will reach retirement age and will require pensions for more years. For policy makers, this means that the system will cost more and more over time, but also that there will be a stronger demand from the society for a good pension system, as working adults will not be able to cope with increasing costs for their parents.

A comprehensive pension system guaranteeing income security in old age is necessary to address the financial vulnerability caused by the increasing dependency ratio of elderly people to people aged 15–55, and also to recognize the important social contribution elderly persons make to households and communities.
The actuarial review shows that a fully funded defined contribution (DC) scheme represents a high level of risk for a country like Cambodia, where high salary growth will continue to be the norm. These risks are exacerbated by the undeveloped nature of the country's financial markets. Cambodia does not currently have a financial market that can support a funded pension system. The evidence points to a defined benefit (DB) plan as the most appropriate system for the Cambodian context.

At the same time, it is important to keep in mind that any contributory scheme will have very low coverage in Cambodia during its initial years. By itself, a traditional social insurance scheme will not provide adequate income security to Cambodia's elderly immediately. The importance of atypical working arrangements and short duration contracts means that the majority of the population will most likely not benefit from any pension in the short- and even mid-term. Even the core of the formal sector is actually informally employed for almost half of the year, as shown by the fact that, on average, members contribute only 7.2 months per year. For long-term benefits such as pensions, it means that workers will accumulate years of service very slowly, which could significantly affect the level of their pension.

To take into consideration the different risks and needs of the different stakeholders, the ILO would recommend the Government of Cambodia to consider the establishment of a pension system based in a multi-tiered solution. A diversified system will be the best strategy to meet future challenges.

The basic social protection floor, and first tier of the system, will have to come from a non-contributory pillar. This will be the only way for Cambodia to provide a floor of old-age protection in the short and medium term. The second tier, which is the heart of the system, should be a contributory DB scheme. The study shows that in the early stages, Cambodia would benefit more from a PAYG system with a solid strategy to gradually increase investment as the financial market develops. A partially funded system could allow for a more flexible financing strategy in a country like Cambodia, with the creation of reserves to balance the gradually increasing higher costs of the system in the future.

The design of the pension system should address several important elements:

- If the eligibility requirement is too long, people will be discouraged and unwilling to contribute.
- If pensions are too low, it loses its relevance and people will lose confidence in the system. The design should provide clear incentives to contribute, and should inform people about these incentives.
- The final benefits should be calculated on the basis of the entire salary history and the pension scheme should be career indexed, meaning that the past salary should always be updated to a level that makes sense today.
- A pension formula should assign a higher accrual rate for the first years of work, taking into account the fact that, on average, workers have short careers in formal employment relations.

Finally, as part of a multi-tiered system, an optional DC scheme could be implemented for people who want to ensure a higher income replacement. In this case, proper regulations are extremely important.

The ILO would also recommend the Government to thoroughly consider the possible implications of defining a minimum pension as a function of the minimum wage, due to all the risks associated with that option. It not only increases the costs of the system and reduces incentives for contribution, but also creates financial risks in the future, as it makes the system costs depend on a politically defined variable. Instead, as recommended, a flat pension could offer a better protection, with its impact going beyond the income level of those in the formal economy and with less risk of distortions of the contributory scheme.

INTRODUCTION

This technical note is based on the actuarial study for the design of a pension system for private sector workers, which presents an in-depth financial analysis of different design solutions. This paper tries to capture the central elements of that analysis, and also includes some new design options that resulted from the evolving national dialogue on this subject that has taken place since late 2015.
The first draft of this report was presented and discussed with tripartite stakeholders at a highlevel meeting on the 13th and 14th of November, 2017, in Siem Reap. The final policy options presented here, and their distinct design parameters, are the result of this discussion.

1. BASIC CONCEPTS FOR PENSION DESIGN

Social insurance pensions can be designed on the basis of defined benefit (DB) or defined contribution (DC) plans.

1.1 THE RELATIONSHIP BETWEEN CONTRIBUTION AND BENEFITS

In **a defined benefit scheme**, a pension is calculated on the basis of years of contributions and the insurable earnings. The formula for the pension generally promises a yearly pension which is a certain percentage of the yearly income (called the **accrual rate**) per contribution year. The accrual rate multiplied by the number of years of contribution gives us the **replacement rate**.

The pension is then generally calculated by multiplying the replacement rate by the reference income of the beneficiary. The reference income can be the last income of the contributor, or the average income over a certain number of years.

The Government can review these parameters through legislative reforms, adjusting it, for instance, to changes in the economy, demographics or labour market.

In **a defined contribution scheme**, contributions are simply saved. The accumulating amounts of contributions earn interest during the active years of contribution and, at the point of retirement, the amount of lifetime savings is paid out either in form of a lump sum, or converted into an annuity (a yearly amount that is paid until death).

A recent addition to pension design types is the so-called **notional defined contributionscheme**. This uses the principal calculation of a defined contribution pension in schemes that do not have real reserves.

The virtual annual rates of return (i.e. fictitious interest rates) used for the accumulation of interest in the fictitious account balances are normally stipulated by law.[1]

1.2 FINANCING PENSION SCHEMES

Pensions can be financed on a pay-as-you-go, partially funded or fully funded basis.

Full funding means that the level of reserves at any point in time can cover all future pensionliabilities acquired, at least in theory. Defined contribution schemes are automatically fullyfunded, as their liabilities to individual contributors are always equal to the amount they havesaved. In theory, defined benefit schemes can be fully funded too, but in practice, they rarely are.

Partial funding means that at any point in time, the pension scheme must have a minimum level of reserves. This amount – generally defined by law – is less than the actuarial equivalent of all future liabilities. The fact that new generations of workers will continue joining the mandatory social security scheme makes partial funding possible, because their contributions help guarantee most of the scheme's future liquidities. Reserves largely serve the purpose of smoothing contribution rates and helping to smooth the effects of economic downturns.

Pay-as-you-go (PAYG) is an extreme case of partial funding with a very low level of reserves, as PAYG schemes rely almost entirely on the future contributions of the active generations to pay the pension of each contemporary pensioner generation. Defined benefit schemes tend to be PAYG, as they rely on the future contributions of the active generations to pay the pensions of the retired population.

In assessing the most adequate funding modality for Cambodia, it is important to note that Cambodia does not currently have a financial market that can support a funded pension system.

For the moment, the Cambodian financial system offers limited investment alternatives. One-year term deposits are the longest maturity savings instruments available. Extending bank deposit maturities beyond a one-year term would theoretically be possible, but interest rates would not be more attractive.

The development of the securities market is still at an early stage. The Government is just starting to consider the issuance of the first government bonds, but the process will take some years.

Despite the strong commitment of the Securities and Exchange Commission to introduce corporate bonds and attract new companies to the stock exchange, it is not expected that the market will have enough dimension to absorb NSSF projected reserves.

[1] P. Plamondon et al.: Actuarial practice in social security, ILO, 2002, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/--soc_sec/documents/publication/wcms_secsoc_776.pdf [accessed 12 Dec 2017].

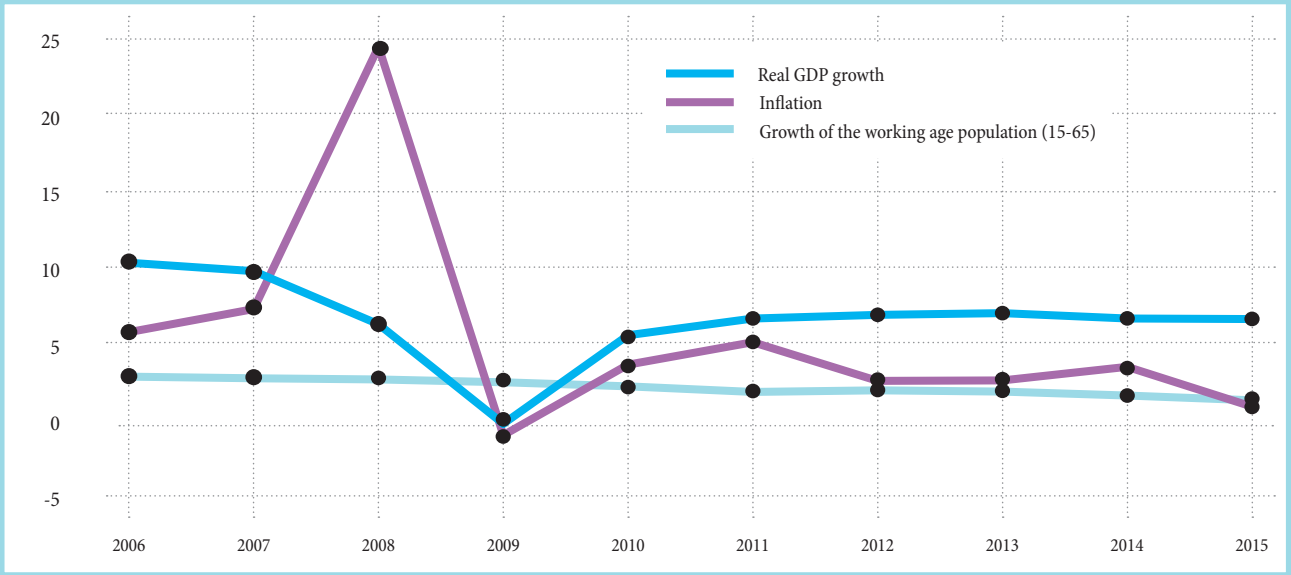
2. Demographic and economic context

The future income and expenditures of any social security scheme are closely affected by changes in the size and age structure of the population, employment levels, economic and wage growth, inflation, and rates of return on investments. Annex I presents the main economic and demographic assumptions on which this paper is based. More details can be found in the underlying actuarial study.

2.1 HIGH ECONOMIC GROWTH

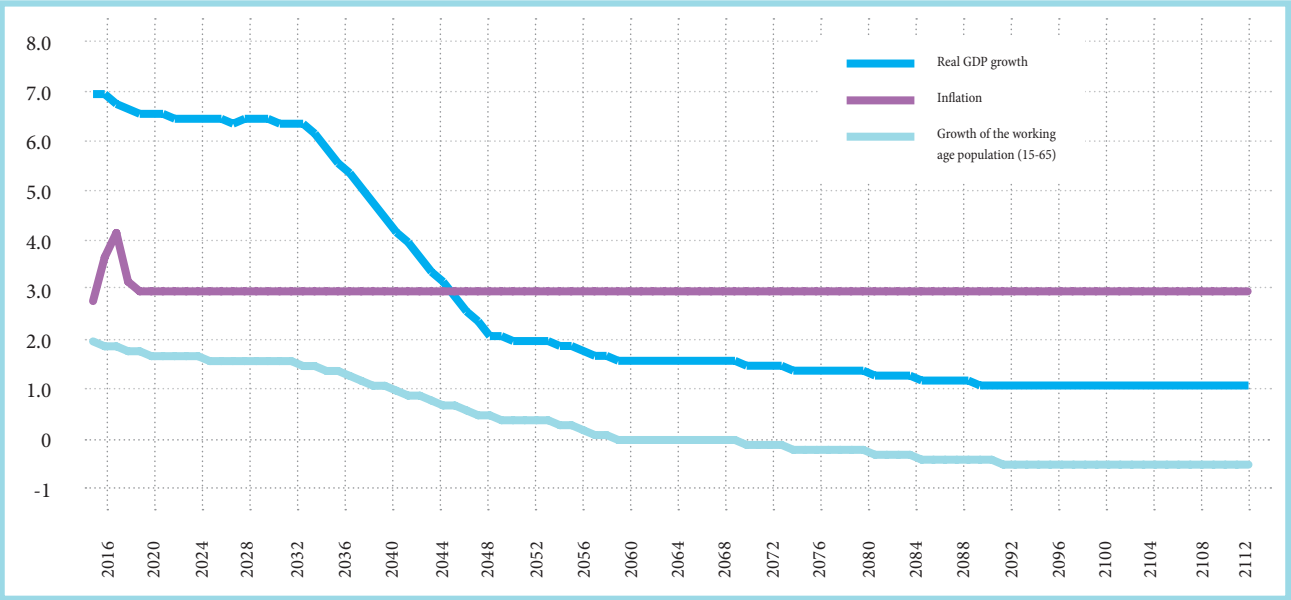
Cambodia is one of the fastes growing economies in the world, with an average annual growth of 7 per cent in the last decade. According to the International Monetary Fund (IMF), this trend is expected to continue in the foreseeable future. Wage growth has also followed this high trend.On average, the annual average salary increase between 2010 and 2015 for the members at the NSSF was 15.8 per cent.

Figure 1 – Growth of GDP, the working age population and inflation, Cambodia, 1990–2015



As can be seen in Figure 2, the high growth in real gross domestic product (GDP) is expected to continue for the next 20 years, accompanied by a high average salary increase. Based on the experience of other economies, it is expected that after a certain point the pace of growth will slow down.

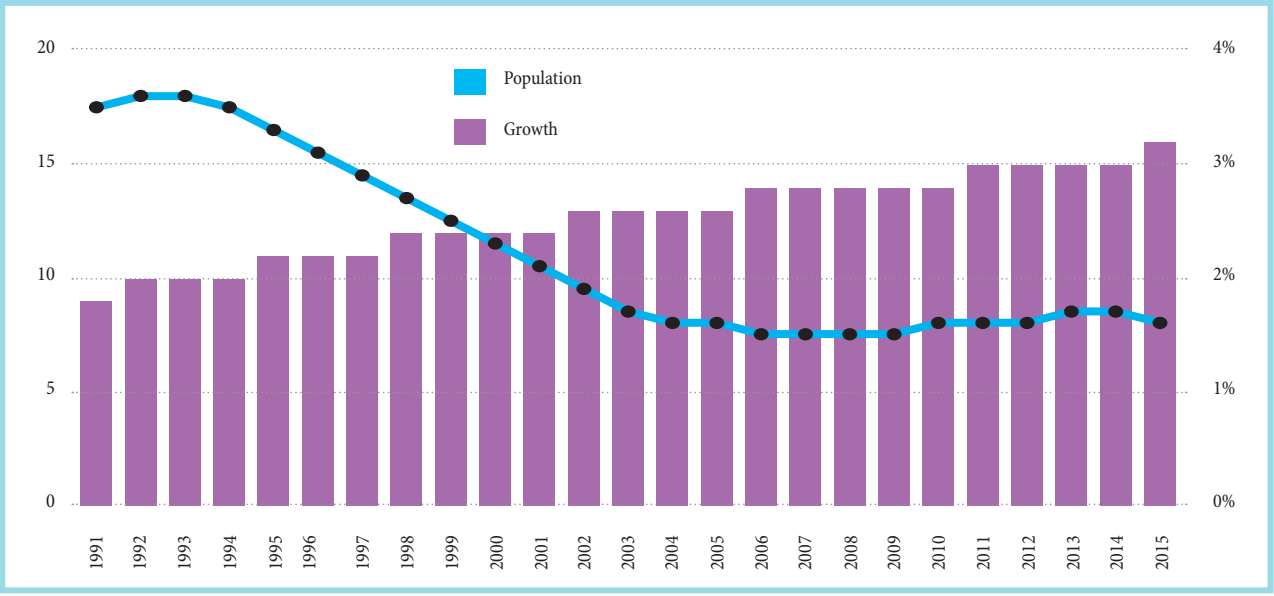
Figure 2: Projected growth of real GDP, the working age population and inflation, Cambodia, 2016–2112



2.2 HIGH POPULATION GROWTH

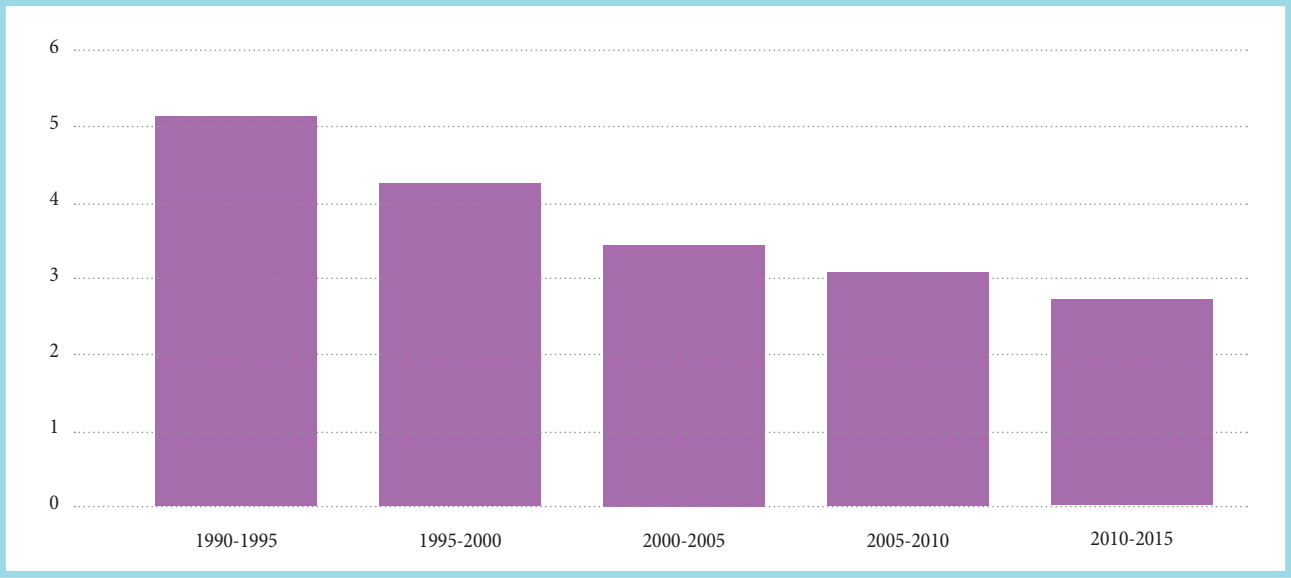
Following the years of conflict, the country's population grew rapidly from a little more than 10 million people 20 years ago, to 15.6 million in 2015. This represents an average annual growth of 1.9 per cent.

Figure 3: Population and population growth, Cambodia, 1991–2015



A high fertility rate has been the motor of this high population growth. Like neighbouring countries, Cambodia has recently experienced a decline in fertility, but the total fertility rate in Cambodia, at 2.7 in 2015, still remains high within the region.

Figure 4: Total fertility rate, Cambodia, 1991–2015



2.3 HIGH LIFE EXPECTANCY GROWTH

Life expectancy at birth in 2015 is estimated at almost 67 years for males and 71 for females. Life expectancy has increased considerably over the last 20 years and is expected to continue to increase. From an average of 69 in 2015, it is expected to increase to 81 by 2065. When it comes to pension schemes, however, life expectancy at retirement age is more relevant. In 2015, the life expectancy at age 55 is 20 years. In 2065, it will be 29 years, meaning that the number of retirement years will have increased by almost a third.

Figure 5 – Life expectancy at birth, Cambodia, 1990–2015

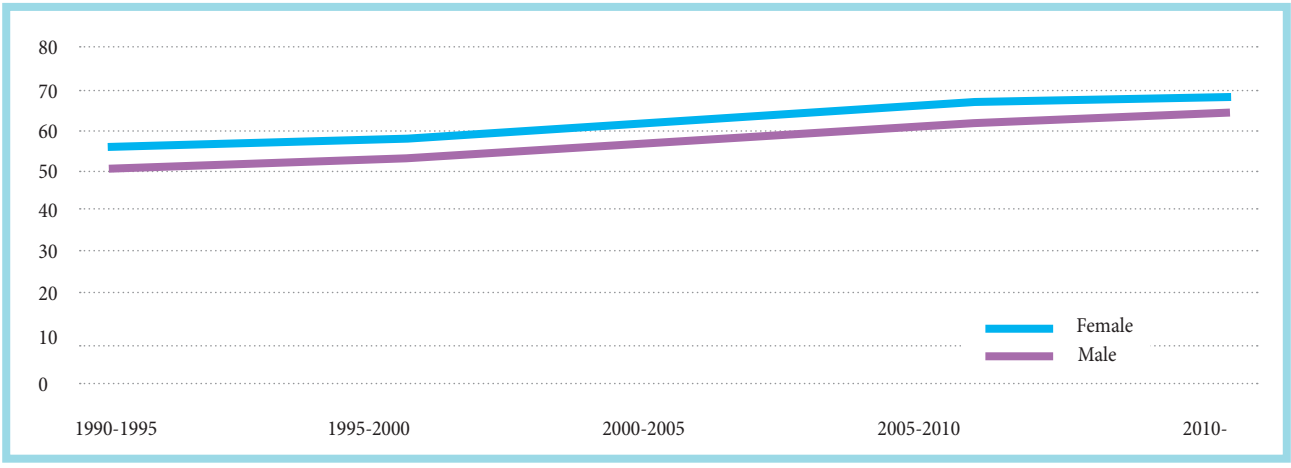
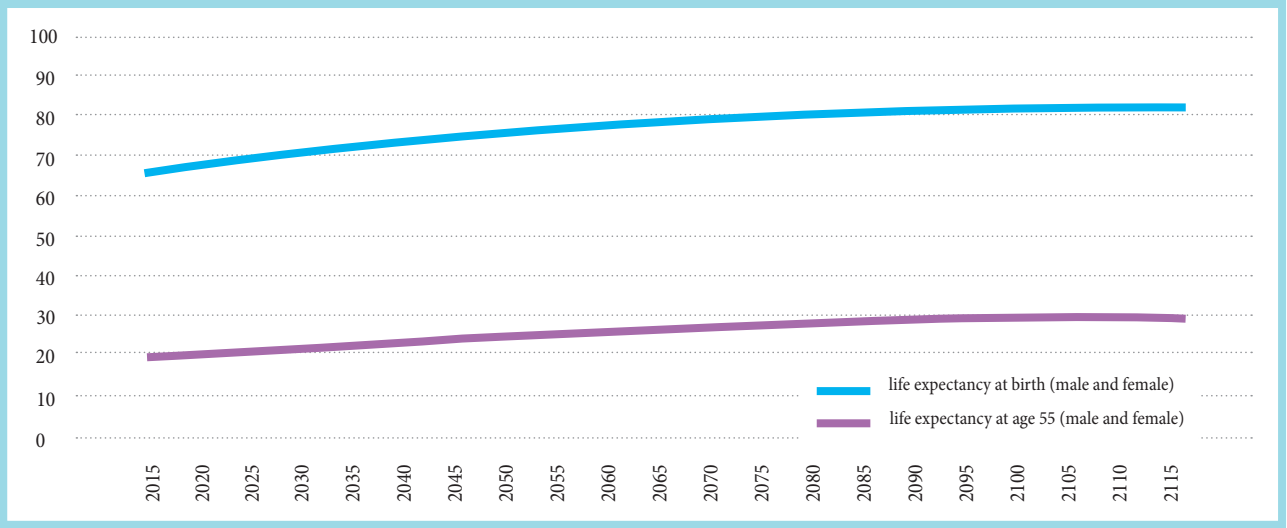


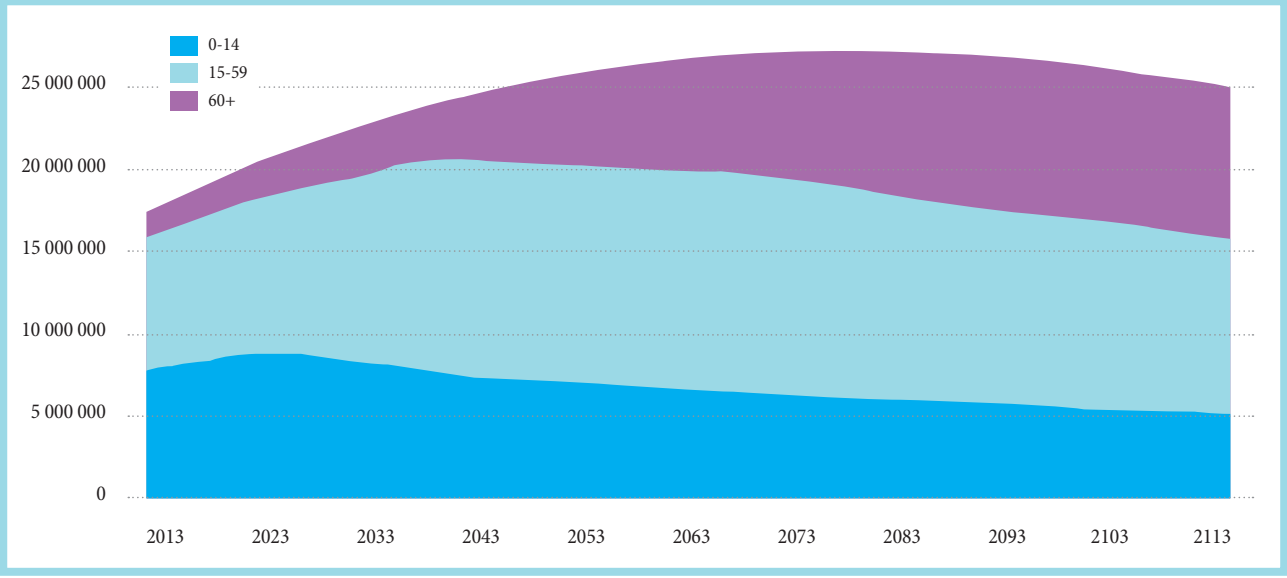
Figure 6 – Life expectancy at birth, Cambodia, Projections 2015–2115



2.4 FUTURE POPULATION GROWTH

Based on these projected trends, the population of Cambodia is expected to continue growing for the next 60 years. The highest growth will be in the population aged 60 and above. Today, for every elderly person aged 60 and above, there are 10 people aged 15–60. Within 50 years, this ratio will have fallen to only 2.5 people aged 15–60 for every elderly person over 60. This illustrates the importance of appropriate long-term planning for pensions systems.

Figure 7– Projected population distribution, Cambodia, 2013–2113



The factors discussed above have important implications for the financing of a social security pension scheme:

1. Slower population growth

Population growth will slow down in Cambodia over the next decades. This means that there will be fewer and fewer people to finance pensions. This context places particular pressure on PAYG schemes and advises the use of funded or partially funded solutions where the financial markets allow for it.

2. Increase in life expectancy

As life expectancy continues to rise, more Cambodians will reach retirement age and will require pensions for more years. For policy makers, this means that the system will be increasingly costly, but also that there will be a stronger demand for a good pension system. At the individual level, this means that the lack of access to an adequate pension could be catastrophic.

3. Rapid economic and salary growth

Rapid economic and salary growth are two determining factors for identifying the most appropriate funding system: PAYG or fully funded.

In his paper Criteria for The Optimal Design of a Social Security Retirement System, Professor M. Robert L. Brown of the University of Waterloo, Canada and eminent specialist in social security pointed out:

More heavily funded social security retirement systems (SSRS) are preferable when rates of return on investments exceed the rate of growth of the contributions base of the system (which is the reality in many advanced economies with aging populations today). Less funding (and hence more PAYGO financing) would be preferred when the growth of the contributions base exceeds the rate of return on investments [...]

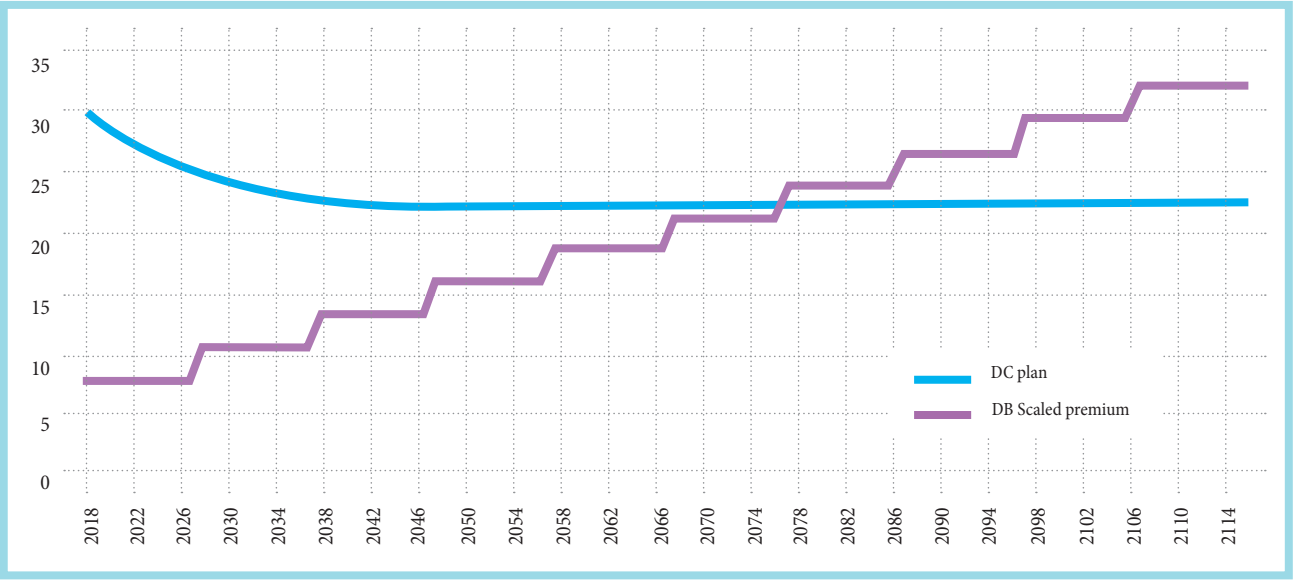
It is worthy of note, however, that a funded SSRS is inherently no more secure and no more predictable (i.e., less volatile) than a PAYGO scheme.

3. A defined contribution (DC) scheme for the private sector

Figure 8 shows the contributions rate (blue curve) necessary for a worker to secure an income replacement rate of 45 percent on retirement after 30 years of contribution in a DC plan, as stipulated by ILO Convention 128. According to the actuarial study, under a DC plan the contribution rate necessary to replace 45 percent of the salary is higher today than in the future. This is mainly due to the period of high salary increase at the

beginning of the projection period. In 2018, for example, workers aged 30 must contribute around 30 per cent of their salary in order to retire at age 60 (after 30 years of work) with an income replacement rate of 45 percent. In 2050, workers aged 30 would contribute 22 percent. This illustrates one of the key challenges for Cambodia to implement a DC scheme: the costs will be higher in the early stage.

Figure 8 – Comparison of contribution rates under a DC plan and a DB partially funded system, Cambodia, 2018–2117



The relation between the return on assets and increase in salary in a DC scheme is illustrated in Table 1. The higher the real salary increase is in comparison to the real return on assets, the lower the income replacement on retirement will be. This extreme range illustrated in the table exemplifies the high level of risk that a fully funded option represents for Cambodia. These risks are exacerbated by the undeveloped nature of the country's financial markets.

	REAL RETURN ON ASSETS (%)				
REAL SALARY INCREASE (%)	2	3	4	5	6
2	34	44	58	76	98
3	30	39	50	64	83
4	25	33	43	55	70
5	23	29	37	47	61
6	20	25	33	42	53

In Figure 8, the contribution rates under a DC plan are also compared to the schedule of contribution rates for a partially funded DB scheme discussed in section 6.1. The contribution rate at the beginning of the projection period is much higher under a DC plan (30 per cent) than under a partially funded DB scheme (8 percent). At the end of the projection period, this is the opposite, with a 22 percent contribution rate for the DC scheme versus 33 per cent for DB.

However, the lower contribution rate for the DC plan the end of the projection period is highly dependent on assumptions about the return on investment and wage developments. At the end of the projection period, both the DB and DC schemes are more mature, with more pensioners.
The demographic and economic environment is also not as favourable as the one prevailing at the beginning of the projection period.

Depending on the perspective of the analysis and context, a social security DC plan has advantages and disadvantages. The following table illustrates the pros and the cons of implementing a DC pension scheme as a social security pension scheme.

Table 2 – Pros and cons of implementing a DC social security pension scheme in Cambodia

PROS	CONS
No liabilities created other than the value of the accumulated account.	The undeveloped nature of the country's financial markets makes this solution difficult and risky.
Depending on a positive development of the financial market, the cost can be lower in the long run than a PAYG scheme.	By its nature, in a DC, there is no guarantee of having a targeted minimum income replacement rate on retirement.
Benefits are totally a function of the contributions paid.	The protection for the survivors and invalidity can be much lower than under a DB scheme.
If annuities are offered, there is an automatic adjustment process to mitigate the impact of the increase in the life expectancy.	Puts the financial risks on the shoulder of the individual.
	If annuity options are offered on retirement, an administrative and risk management process should be implemented.
	Depending on the design, it may let the individual assume the longevity risk.
	Not as flexible as a DB partially funded scheme in term of financing mechanism.
	There is no income redistributive function to the poor and those with atypical careers.
	It is more difficult to integrate some special additional features like a grandfathering provision.
	There is a need to put in place a regulatory authority. It may also depend on who will provide the investment services of the DC.
	Does not comply with ILO minimum standard.

All the economic, financial and demographic factors outlined in the previous section will affect the Cambodian system to a certain degree. The best possible system will be one that is designed to minimize risks particular to the Cambodian demographic, economic and financial context. As mentioned earlier, the actuarial study shows that in the case of Cambodia, establishing a DC scheme as the core of the system would make old age protection extremely risky, and contributors would have no control over the kind of pension they would receive. While it is clear that a DC scheme should not be the foundation of the Cambodian pension system, it is possible for it to play a role.

An optional DC scheme could be implemented for people who want to ensure a higher income replacement. At the same time, it is important to keep in mind that any contributory scheme will have very low coverage in Cambodia. To meet this challenge, the regulation of the products offered is essential. Thus, another important component of the system will have to come from a non-contributory pillar. This will be the only way for Cambodia to provide a floor of old-age protection in the short and medium term.

It is recommended that while the foundation of the system should be a DB scheme, a diversified system will be the best strategy to meet future challenges. The study shows that in the early stages, Cambodia would benefit more from a PAYG system with a solid strategy to gradually increase investment as the financial market develops. In addition, social security systems are flexible, and in the future, a partially funded system could allow for a more flexible financing strategy in a country like Cambodia.

4. Analysis of current NSSF members: Key findings

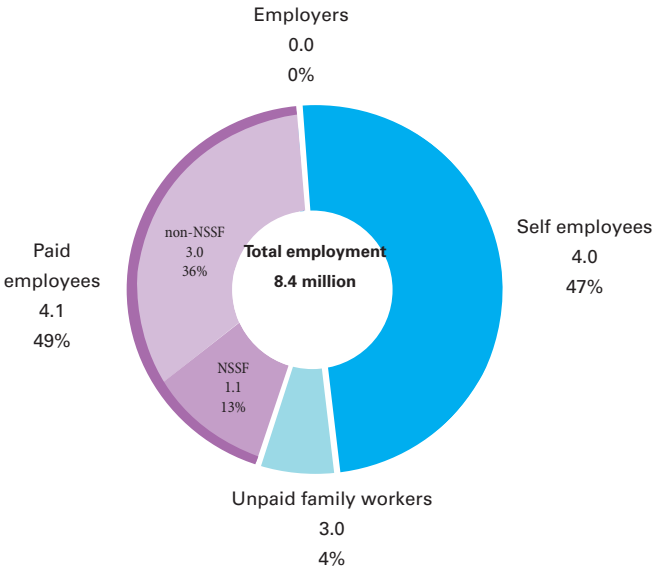
The Law on Social Security Schemes for Persons Defined by the Provisions of the Labour Law was enacted in 2002, in order to introduce social security benefits and establish a new administrative institution, the National Social Security Fund (NSSF) under the Ministry of Labour and Vocational Training (MoLVT). The law stipulates the introduction of a pension insurance fund and mandates the NSSF to cover all persons defined by the provisions of the Labour Law. However, as the Labour Law mentions that companies with eight (8) or more workers should have internal regulations and overtime, the MoLVT has used this threshold as a practical definition for formal companies, or the formal sector. In practice then, the NSSF covers the population of formally employed workers within the private sector. This is equivalent to 13 per cent of all persons employed in Cambodia.[2]

Quite recently, the NSSF has announced the expansion of coverage to workers in any size of company, or all wage employees. This measure is expected to benefit the 3 million workers, most of them engaged in micro and small enterprises (MSEs), who comprise the rest of wage employment in Cambodia and could potentially be formalized. Still, about 50 per cent of workers, mostly self-employed and unpaid, will remain in the informal sector.

The actuarial study carried out an in-depth diagnostic of the current working population covered by the NSSF to design a pension scheme that fits their specific profile and needs. Policy makers should be mindful of any substantial changes in the demographic profile of the population in the near future.

[2] Cambodia Socio-Economic Survey, 2014.

Figure 9 – Employment by status(2015)

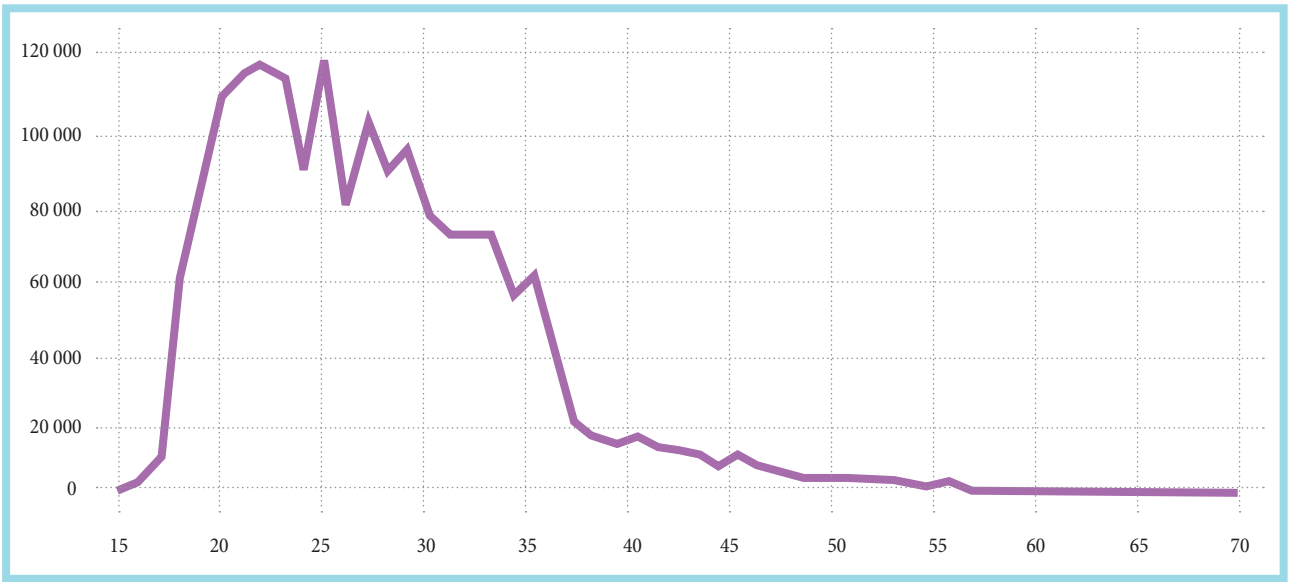


4.1 THE PROFILE OF NSSF MEMBERS

A young population composed mainly of women

The profile of private sector formal workers is completely different from that of public sector workers. According to the data collected, most NSSF members are women working in the garment sector. Women represented 71 per cent of all active NSSF members in 2015. That year, women in the garment sector represented 55 per cent of all active contributors. The following figure shows the distribution of the contributors in 2015.

Figure 10 – Distribution of the workers covered by NSSF in 2015, male and female



Significant leaving and re-entry rates, including from the formal to the informal sector

Unlike civil servants who are employed permanently under unlimited duration contracts (UDC), workers in the garment sector are mostly employed under fixed duration contracts (FDC). **In 2006, the average length of fixed duration contracts was normally one year; in recent years this has been reduced to three months**.[3] According to the data collected from the NSSF, workers in the private sector frequently leave and re-enter employment, moving not only from one employer to another, but also from the formal to the informal sector.

The bulk of workers are between the ages of 19 and 45. While the study did not look into the reasons for this unusually young population of workers, hiring patterns in the garment sector could be important. Employers are generally not willing to hire people over the age of 40, and workers also grow tired of the specific lifestyle that working in a factory represents. Workers are usually away from their families, whom they only get to see once or twice a year; they endure high-pressure repetitive work for long hours; and they see little opportunity of moving up the ladder into better jobs.[4] However, for most of these workers the only alternative is to find jobs in the informal sector, including going back to farming activities.

This high mobility of contributors is evident in the NSSF data. In December 2015, there were about 1 million insured people. However, the number of insured jumps to a little bit more than 1.6 million if the complete year of 2015 is analysed rather than only the month of December. This difference means that many workers contributed in 2015, but not for the complete year.[5]

The analysis of the NSSF data found that in 2015, the average proportion of the year where a contribution was paid is about 60 per cent or 7.2 months,[6] meaning that even the core of the formal sector is actually informally employed for almost half of the year. The same pattern has been observed for the years 2010 to 2011, but to a lower degree. In fact, the density of the contribution was about 50 per cent in these years. This is a very important characteristic of the targeted population. In the short term, it means workers will find it hard to meet minimum eligibility criteria for benefits like maternity leave, which requires nine months of continuous contribution before eligibility, or even health insurance, which requires two months. For longterm benefits such as pensions, it means that workers will accumulate years of service very slowly, which could significantly affect the level of their pensions.

[3] Fair Action, 2015. A short-term solution: A study of the use of fixed-duration contracts in the Cambodian garment industry.

[4] A separate study from Better Factories Cambodia has found that over 70 per cent of all mid-level and top-level management positions at garment factories are occupied by foreigners.

[5] According to discussions with representatives of NSSF, some problems with data exist, but the magnitude cannot be assessed. These issues stem mostly from the widespread lack of official IDs among workers. This is an issue the NSSF is tracking through the introduction of their own biometric identification system, but it will continue to be a challenge in the absence of a strong civil registration system. See: ILO. Review and Assessment of the Cambodian National Social Security Fund Operations (forthcoming).

[6] The density of contributions is the proportion of a year where contributions have been paid to the scheme.

Formal employment at the edge of informality

As mentioned above, the NSSF population comprises currently only 13 per cent of all employed people in Cambodia, meaning that for the purpose of social security coverage, the remaining 87 per cent are effectively informal. Thus, the probability of formal workers being re-employed in the informal sector is very high. Consequently, designing a pension system tailored only to workers in formal employment will not only be ineffective for them, but will also exclude the majority of workers in Cambodia.

4.2 THINGS TO CONSIDER WHEN DESIGNING THE NEW SCHEME

Designing a pension scheme for the private sector in Cambodia is therefore not the same as designing a pension scheme for the public sector, and both are different from designing a pension system in a country with different labour patterns. Atypical working arrangements and short duration contracts are important elements to be considered. In other words, if the goal is to provide adequate minimum protection in old age, there are risks to be avoided and protections to be put in place that are particular to the Cambodian context. The new pension scheme for the private sector should be meaningful for all members; otherwise, members will not have an interest in contributing to the scheme.

The actuarial study shows that a DC model is not adequate to serve as the basis of the pension system in the Cambodian context, as it would be too risky and most likely will not provide decent protection. Thus, the following design elements are based on a DB scheme and tailored specifically to the Cambodian profile:

- If the eligibility requirement is too long, people will be discouraged and unwilling to contribute.

- If pensions are too low, people will lose confidence in the system. The design should provide clear incentives to contribute and people should be made aware of that.

- Final benefits should be calculated on the basis of the entire salary history.

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- Following on the previous point, the reference salary used in the pension formula should not be based on the last salary, or even the last 5 years of salary, for example. For the private sector (and even for the public sector), there is a dangerous loophole if a design uses only the last salary to calculate a pension. People will learn to take advantage of this design weakness, and it will not be unusual to find that employers double the salary of highly appreciated employees during their last month of work. These workers will get a very nice pension which does not correspond to their contribution history and will thus have to be subsidized by others, ultimately raising the cost of the scheme for everyone. It is thus suggested that the DB scheme consider the complete career for pension calculation.

- In a context of high salary increase, it will be important to ensure that pensions do not lose their value over time, lowering their capacity to protect people. It is suggested that the pension scheme should be career indexed, meaning that the past salary should always be updated to a level that makes sense today.

- The actuarial analysis reveals that people are mostly part of the NSSF in their younger years. Statistically, people over the age of 40 are far more likely to be informally employed and thus unable to participate in the contributory scheme. In such atypical labour markets, the first years of work are much more significant than the later ones, and the pension design should reflect this with a pension formula that assigns a higher accrual rate for the first years of work. This is similar to the design currently used for civil servants, but it would be much more effective and valuable if applied in the private sector.

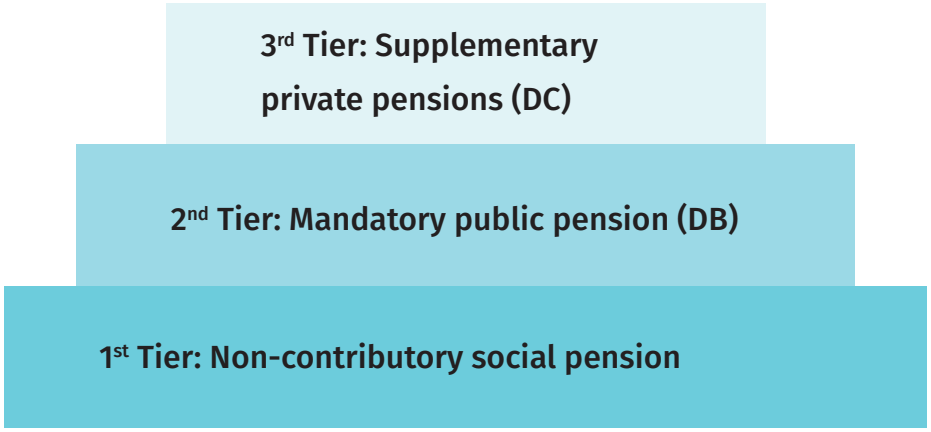
- It is not the goal of the assignment to design a pension plan for the informal sector. It is, however, the goal to make sure that the proposed system will make sense for the Cambodian context, which is predominantly informal. There is an interesting feature in the social security pension system in Thailand that Cambodia might consider. After leaving formal employment, people may choose to remain ensured on a voluntary basis if they have been previously insured for at least 12 months. When people can see that there are advantages in participating, for example in gaining health insurance, it is easier to retain them in the system.

- One of the best ways to expand coverage to people who were not able to accumulate enough years of contribution, including those who were not able to contribute to the scheme at all, is to integrate in the system a flat benefit pension that will ensure that everyone reaching 60 years of age will receive at least a minimum level of protection. The integration of a tax-funded component and a contributory pension scheme should be analysed as the best solution to provide old age protection to a significant part of Cambodian workers.

5. A MULTI-TIERED SYSTEM FOR CAMBODIA

This section presents three different options for a multi-tiered pension system for Cambodia, in line with the vision of the NSPPF 2016–2025. Based on the findings above, at the core of every scenario will be a mandatory contributory DB plan in the second tier.

Figure 11 – A multi-tiered pension system for Cambodia



First tier: Non-contributory social pension

Around the world, more and more countries have adopted tax-funded social pensions over the past two decades. Several decades of ILO experience in assisting member States in the area of pension policies have shown that "traditional social insurance-based schemes or individual saving-bases schemes alone are not likely to solve the coverage problem in the medium-term future in most low- and middle-income countries".[7] Predictably, adequate coverage would also be a challenge for Cambodia as well if it establishes only the core tier. Consequently, the first tier of all scenarios presented below will be a non-contributory social pension with a design that best matches the second tier. In Asia and the Pacific, several countries have already launched tax-funded tiers in their pension systems, including China, the Republic of Korea, Thailand, Timor-Leste, Hong Kong (China), Japan, Brunei Darussalam, Malaysia, the Philippines, Mongolia, Viet Nam and more recently Myanmar.

Second Tier (core tier): Mandatory public pension

This second tier can be designed so as to maximize coverage and retention, but the largely informal nature of the Cambodian labour market means that for the foreseeable future the second tier will still only cover a small fraction of the population. The expansion of this core second tier should be a priority for government to tackle through a long-term cross-cutting strategy of formalizing employment. However, in the short and medium term, the level of protection and coverage afforded by this tier must be supplemented by additional tiers

Third Tier: Supplementary private pensions

The role of private, voluntary pension schemes is relatively limited throughout Asia and the Pacific, since few people have the capacity to contribute to such schemes. Countries attempting to increase voluntary savings usually employ occupational arrangements, which could be an option for groups in Cambodia seeking higher replacement rates, such as civil servants. Still, as noted above, it is important to remember that the enabling conditions for private pensions are not yet in place.

Together, these three tiers form a comprehensive pension system that serves the need of multiple sectors and promotes the continuous growth of the core contributory scheme.

[7] M. Cichon et al. Financing social protection (Geneva, ILO, 2004).

[8] Work-related disabilities are covered by the Employment Injury Insurance branch of the NSSF.

6. DESIGN OPTIONS

As mentioned above, the second tier, with the mandatory DB public pension, is the core of the pension system and the additional tiers must be designed to match it. Thus, this chapter focuses on presenting alternative designs for the mandatory DB public pension. Considerations for the additional tiers are integrated, and fully exemplified in option 3.

6.1 THE BASE SCENARIO

Option 1: In line with the considerations presented in page 21, the authors of the report propose a number of design parameters that make up the base scenario for the projections. This scenario is fully in line with international social security standards.

Table 3 – Option 1 design parameters

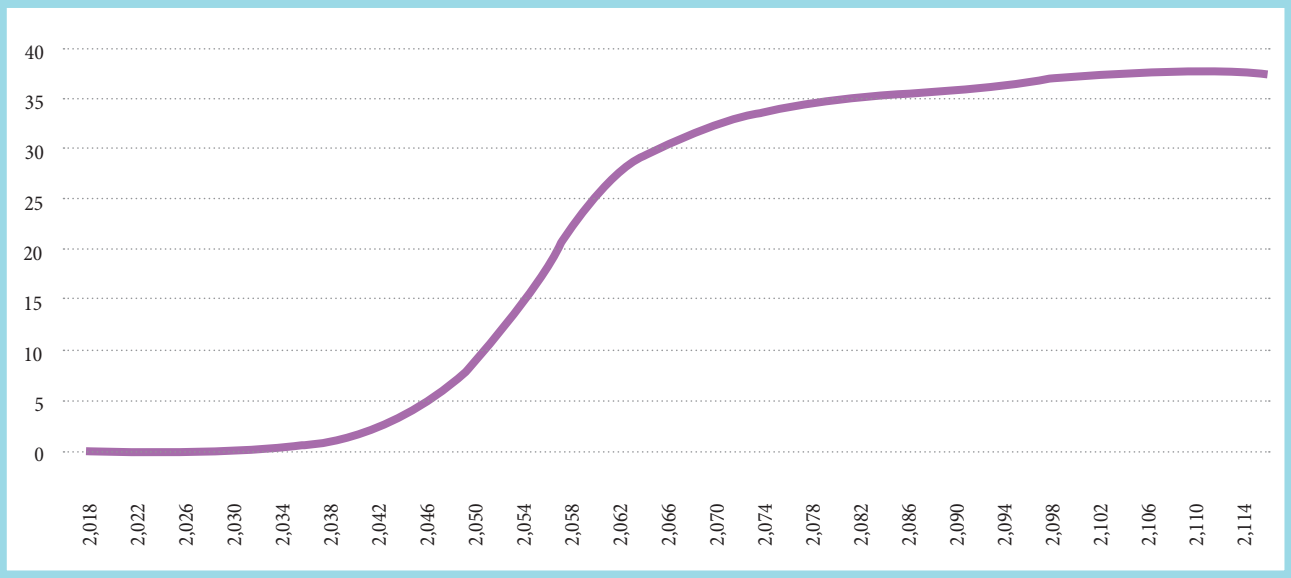
DESIGN PARAMETERS	CURRENT
Insurable earnings	Total salary
Disability pension minimum eligibility[8]	5 years
Survivors' pension minimum eligibility	5 years
Old-age pension minimum eligibility	0 years (if the amount of pension is too low, the value can be paid as a lump sum)
Old-age accrual rate	1.75% per year during the first 15 years of contribution and 1.25% thereafter
Disability accrual rate and minimum replacement rate	1.75% per year during the first 15 years of contribution and 1.25% thereafter, subject to a minimum of 45%
Survivors' pension minimum replacement rate	45%
Spouse share of survivors' pension	50% of the pension based on the old-age pension formula
Child share of survivors' pension	10% of the pension based on the old-age pension formula for each child
Retirement age	60
Minimum pension as average of total salary	N/A
Maximum Insurable earnings	Same as the one of the Employment Injury Branch, increased each year to average salary increase
Funeral benefits	Paid to everyone, without regard to the contributory period, and are estimated at KHR1,562,700 in 2018
Adjustment to pension	Inflation (CPI)

Under this scenario, the PAYG rate rises from 0.5 per cent in 2018 to 34.8 per cent in 2115, and the general average premium (GAP) necessary to pay for all expenditures is 11.6 per cent over the next 50 years and 19.8 per cent over the next 100 years.

The total expenditure of a scheme is normally measured as a percentage of insurable earnings, called the PAYG rate. The PAYG rate represents the contribution rate that would be required to pay all the expenditures of the scheme (including benefits, administration and other expenses), year after year, in the absence of a reserve. In the case of the private sector scheme, the increase in PAYG rate from 0.5 per cent in 2018 to 34.8 per cent in 2115 is mainly due to the increase of the demographic ratio, or ratio of pensioners to contributors.

Over time, there will be more and more pensioners receiving benefits, with more years of service, while the number of contributors will not grow as fast. In 2067, there will be 1.5 active members for each old-age pensioner, while in 2117, the proportion is going to be 1.2. It is important to stress that this evolution of the PAYG cost is not particular to Cambodia; this is the usual evolution of the cost of any PAYG system. Since the increase will only occur in the mid to long term, the country should be able to cope with it in a gradual way.

Figure 12 – Projected PAYG rates, NSSF, 2018–2117 (percentages)

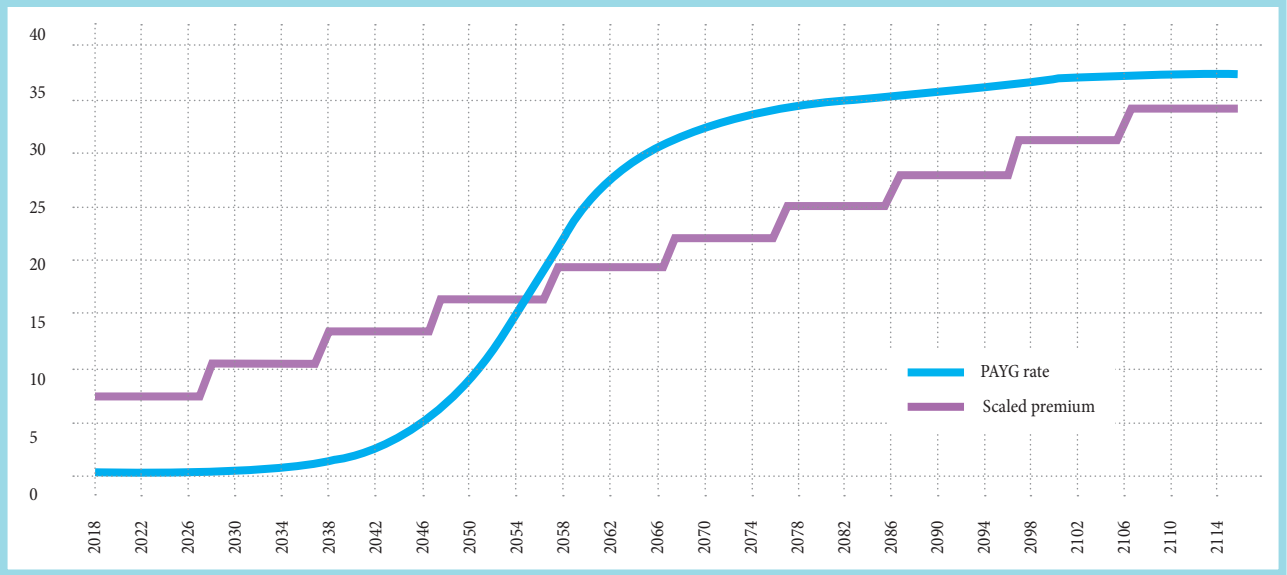


Another important result of the financial projection is the general average premium (GAP). For the present exercise, we will define it the following way: the GAP is the contribution rate that is necessary to pay for all expenditures (including administration and benefits) over the entire projection period, reaching a reserve ratio of five at the end of that time. The actuarial study shows that in the case of the Cambodian private sector, the GAP necessary to pay for all expenditures over the next 50 years is 11.6 per cent. However, if we extend that period to 100 years, the GAP is 19.8 per cent.

Usually, social security pension schemes are not financed through a pure PAYG strategy or the GAP. They are financed using the scaled premium approach. With the use of a scaled premium, the country can start with a lower contribution rate and periodically adjust it upwards. For Cambodia, the following figure compares the effect of

increasing the contribution rate by 2.75 per cent every 10 years starting in 2028, after 10 years of existence. In this scenario, the contribution rate will reach 19 per cent in 50 years. The reserve ratio will be 2 at the end of the projection period. This scenario takes into account the fact the financial markets are underdeveloped at the beginning of the projection period and gradually increases the contribution rates to their ultimate level.

Figure 13 – Scaled premium approach, NSSF, 2018–2117 (percentages)



The contribution rates illustrated on the preceding figure are presented in the following table.

Under this option, it will take 40 years before the first cohort of pensioners will be able to accumulate a full pension at a 57 per cent replacement rate. Grandfathering provisions may be applied to ensure that workers can access a decent pension sooner.

Table – Option 1: Contribution rates under the scaled premium approach

YEARS	CONTRIBUTION RATES (%)
2018-2027	8.00
2028-2037	10.75
2038-2047	13.50
2048-2057	16.25
2058-2067	19.00
2068-2077	21.75
2078-2087	24.50
2088-2097	27.25
2098-2107	30.00
2108-2117	32.75

Box 2: An example of a grandfathering provision

If the pension scheme launches in 2018, employees in the private sector who register until 2020 would receive additional service credit according to the following terms:

TO QUALIFY, WORKERS MUST:

- be above age 30 years at time of registration; and
- contribute to the scheme for at least 24 months of the first 36 months of their registration (24 out of the first 36 months of the scheme, from the date it launches).

ADDITIONAL SERVICE GRANTED:

- half of the period between the age at the time of affiliation and age 30.

FOR EXAMPLE:

- Vireak is 42 years old in 2018
- He has contributed to the NSSF for the past 5 years
- He is granted with an additional 6 years of service for a total of 11 years

Implementing a grandfathering provision will affect the cash flow related to the first generation of new retirees. The GAP over the first 50 years can increase up to 1.5 per cent to finance the grandfathering provision.

This contributory system can be supplemented with a DC pension scheme if there is a need to achieve a higher income replacement rate. The contribution rate of the DC scheme will depend on the level of the salary of the individual.

6.2 OPTION 2: BASE SCENARIO WITH ADDED FLAT PENSION

Option 2 provides the same benefits and provisions are provided as the ones in option 1, with the addition of a flat pension. The flat pension is set at 50 per cent of the poverty line (KHR75,000), the same level of the proposed non-contributory social pension, and starts to be paid at the age 60. The flat pension is indexed to the consumer price index (CPI). The flat pension is a component of the second tier and it is thus financed through contributions. Thus, in the ideal scenario that workers have a full career and have contributed to the mandatory scheme for 30 years, their flat pensions are fully financed through those contributions.

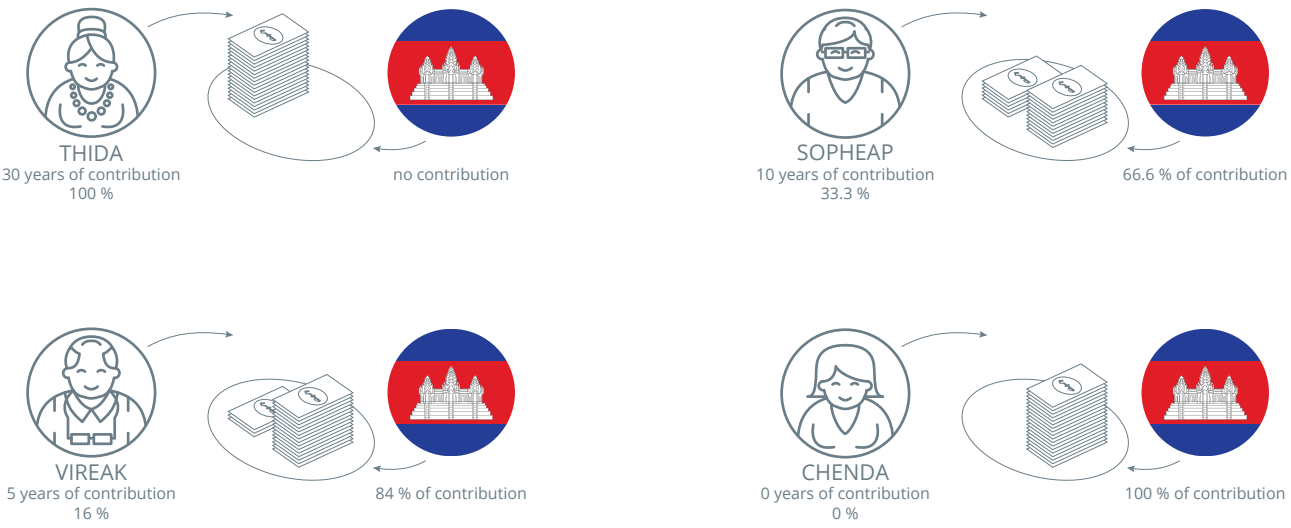
However, evidence shows that under the current labour market conditions, most workers will fall short of these 30 years. For those cases, it is proposed that the flat pension is linked to the noncontributory pension. For example, for a worker who has contributed for 20 out of 30 years, two thirds of the flat pension could still be financed from contributions, and the remaining third would be financed by the Government. Of course, for workers who are informally employed their whole careers, and never manage to participate in the contributory system, the Government would finance the whole flat pension.

Thus, instead of paying for a full non-contributory social pension, the Government will only subsidize the gap of the contributory system. This maximizes the contributory capacity of workers, without excluding those who are informally employed, as it provides a minimum level of protection for all. The part of the non-contributory social pension which is financed from the government depends on the number of years of contribution in the new scheme. The higher the number of years of contribution in the new scheme, the lower the cost to the government. This is illustrated in the following table.

Table 4

INDIVIDUAL	YEARS OF CONTRIBUTION	FINANCED THROUGH CONTRIBUTIONS (SECOND TIER)	FINANCED THROUGH GOVERNMENT (FIRST TIER)	TOTAL
Thida	30	100%	0	100%
Sopheap	10	33.3%	66.6%	100%
Vireak	5	16%	84%	100%
Chenda	0	0	100%	100%

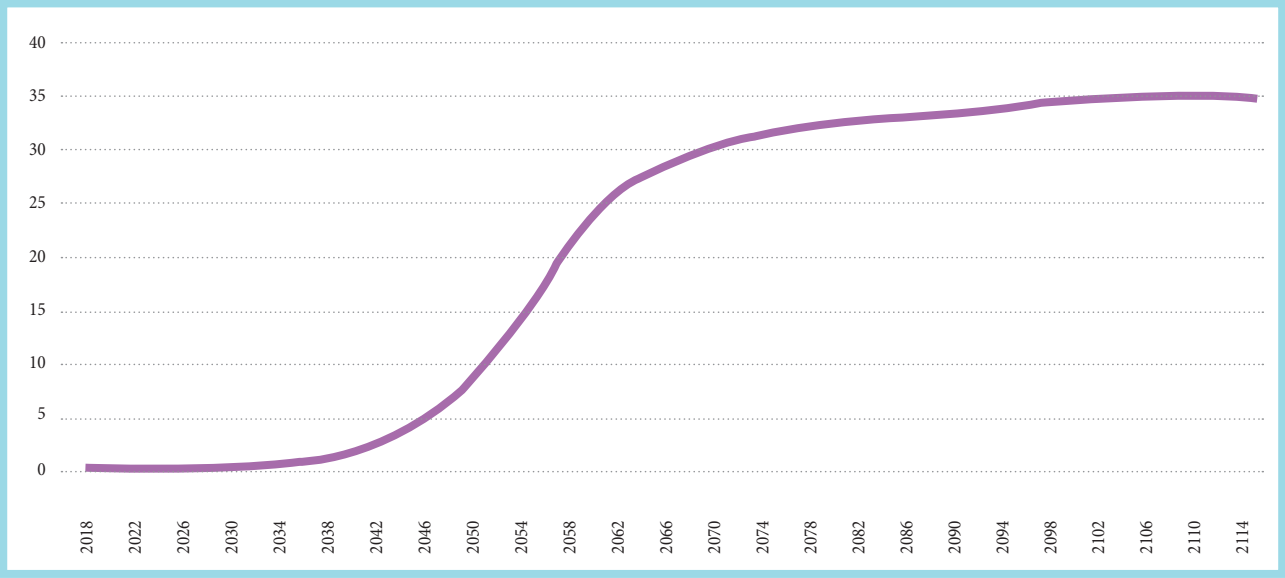
Figure 14 – Flat pension contribution levels



The combination of the two will increase replacement rates; at the same time there is no disincentive, as those with more years of contribution will benefit from higher level of pensions.

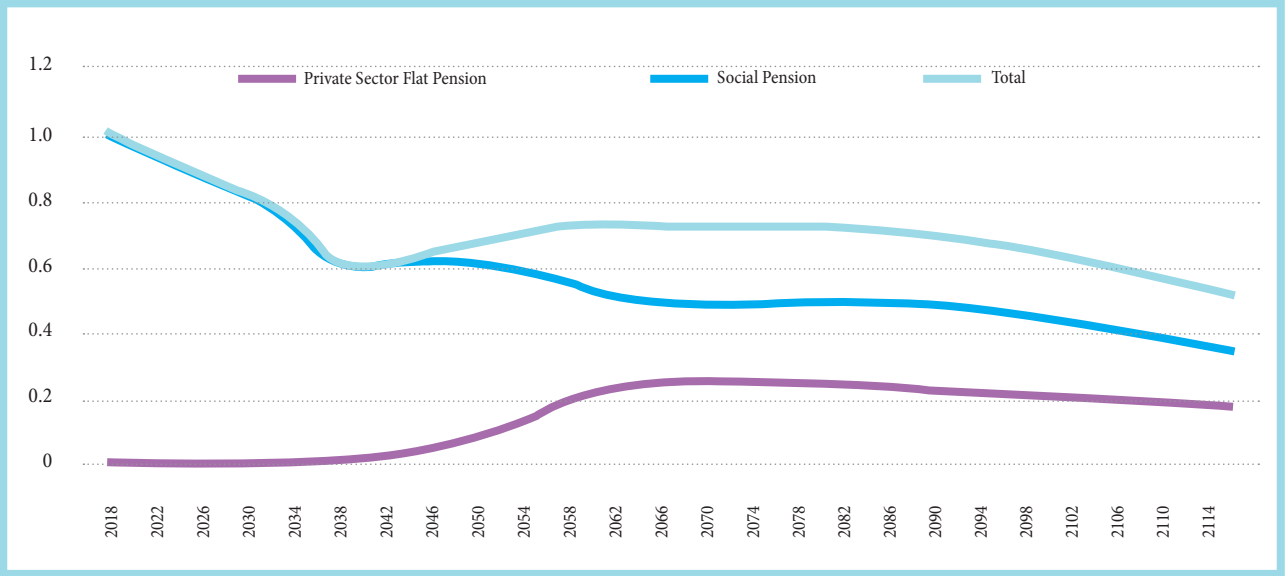
Under this scenario, the PAYG rate rises from 0.5 per cent in 2018 to 35.4 per cent in 2117. The GAP necessary to pay for all expenditures is 12.1 per cent over the next 50 years and 20.3 per cent over the next 100 years.

Figure 15 – Projected PAYG rates, NSSF, Option 2, 2018–2117 (percentages)



The following figure presents the cost of both the flat pension and the social pension in relation to GDP. While the flat pension is financed through the contributions of employers and employees, the social pension is financed through Government revenues.

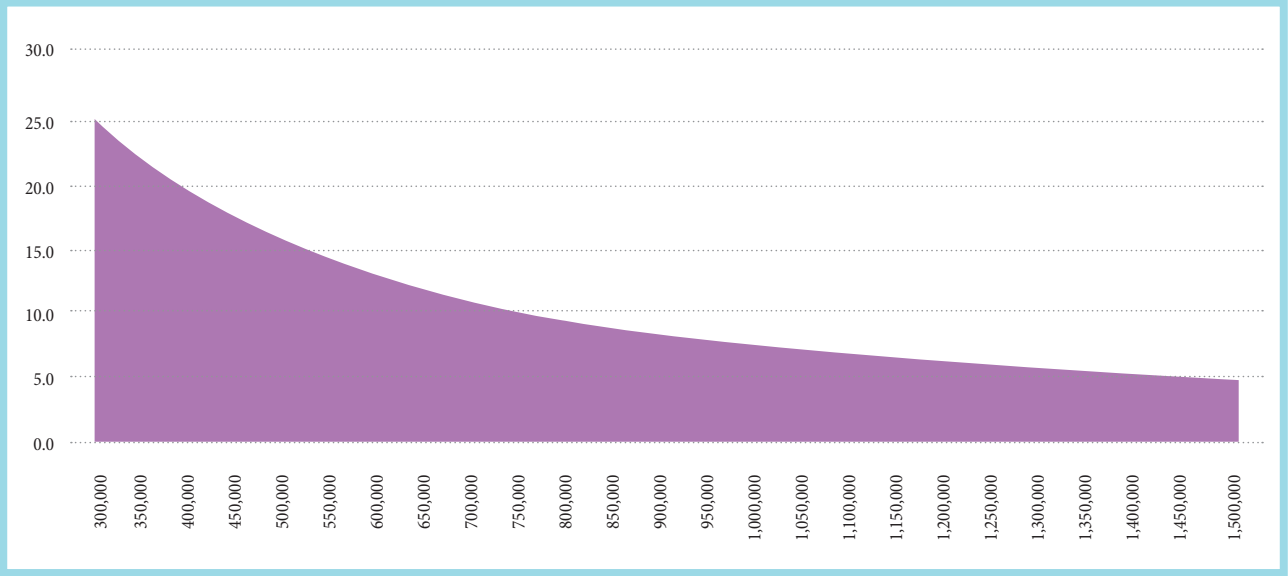
Figure 16 – Projected cost of the flat pension in relation to GDP, option 2, 2018–2117 (percentages)



Thus, under this scenario, the burden to the Government would start at 1 per cent of GDP in 2018 and rapidly decrease to 0.6 per cent of GDP in the next 20 years. The cost of the social pension would continue to decrease as the contributory system grows, reaching just 0.3 per cent of GDP at the end of the projection period.

Since both the flat pension and the social pension are set at the same level (50 per cent of the poverty line), they contribute in the same way to the total income replacement of their beneficiaries, whether formal or informal workers. This amount will be much more significant for people with the lowest salaries, as is shown in the figure below, which shows the income replacement rate of the flat pension or social pension in relation to the salary before retirement.

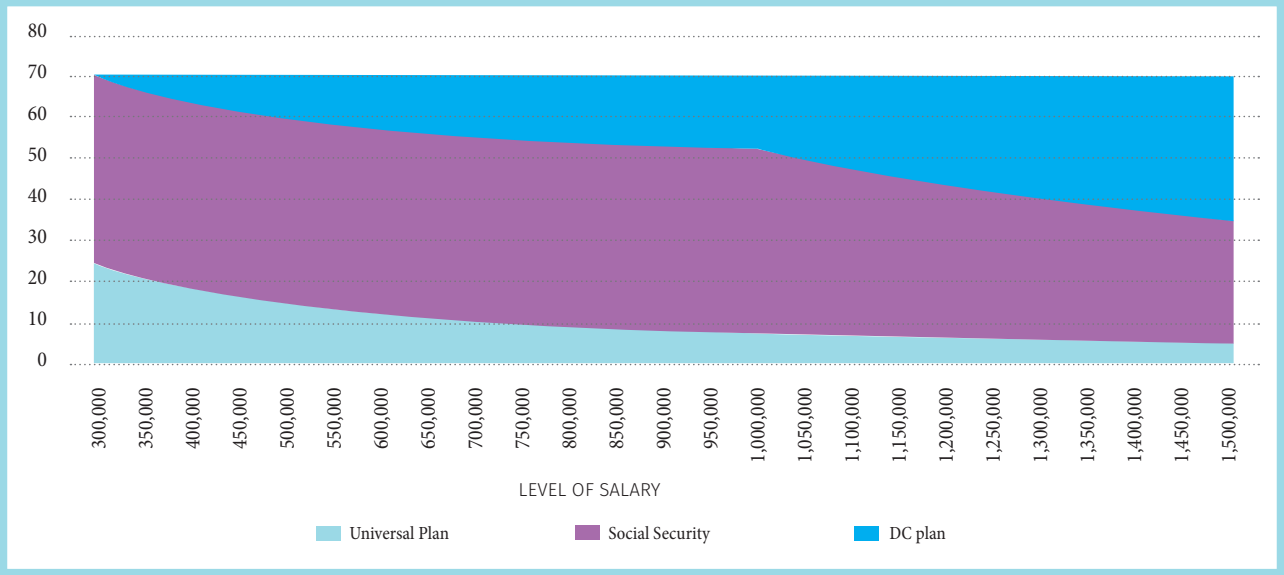
Figure 17 – Income replacement rate, flat pension, 2018, option 2 (percentages)



This contributory system can be supplemented with a DC pension scheme if there is a need to achieve higher income replacement rates for individuals. The contribution rate of the DC scheme would depend on salary level of workers interested in this option. This will tend to be the highest earners with sufficient capacity to contribute to an additional scheme. It should be stressed again that the implementation of DC plan should be done in a context of developed and well-regulated financial markets. A regulatory framework should also be defined for the implementation of DC scheme.

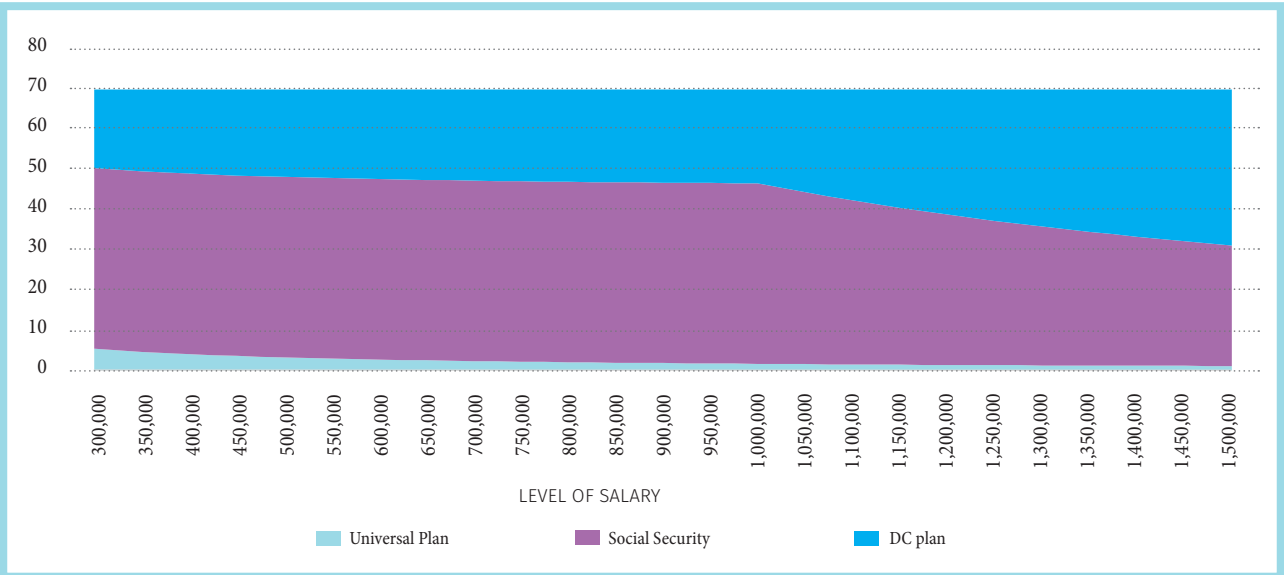
The following figure shows the income replacement rate for each part of the multi-pillar system in 2018.

Figure 18 – Income replacement rate, multi-pillar retirement system, 2048, option 2 (percentages)



The flat pension is linked to the CPI. Because the CPI grows more slowly than salaries at the beginning of the projection period, the flat pension will also grow more slowly than salaries. Over time, the flat pension will replace less and less of a worker's salary. Social security schemes are dynamic systems, however, and can respond to this issue. Depending on the performance of the system, in the future the flat pension will need to be adjusted to better fit the needs of those who are in the poorest income category. The following figure shows the income replacement rate for each part of the multi-pillar system in 2048, according to the assumptions used in the actuarial study.

Figure 19 – Income replacement rate, multi-pillar retirement system, 2048, option 2 (percentages)



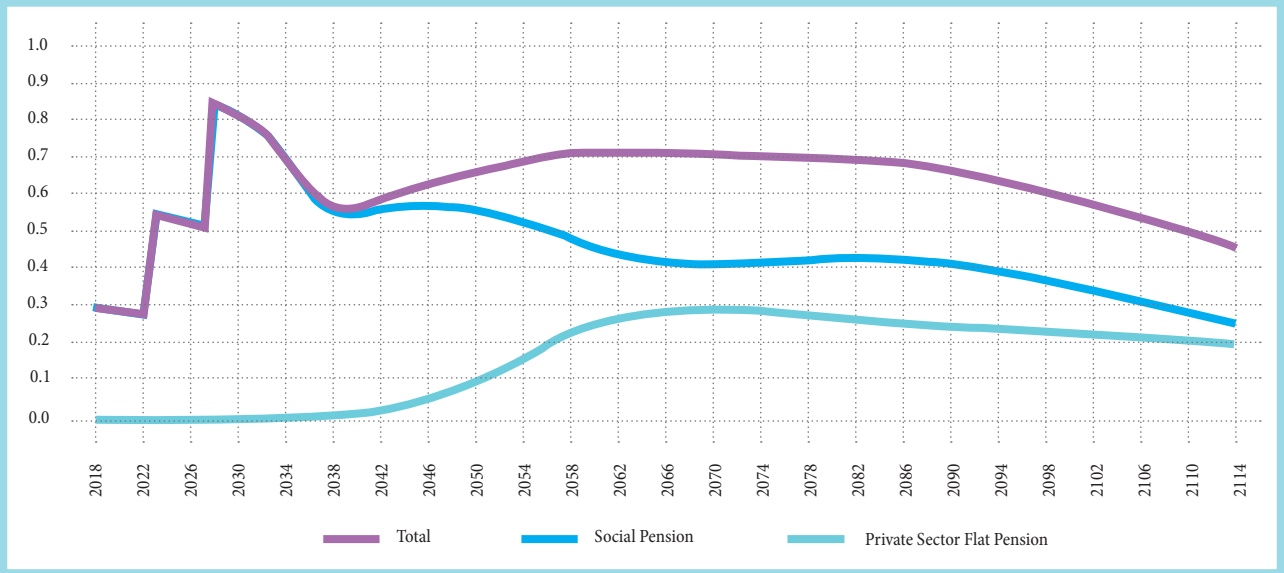
6.3 OPTION 3: BASE SCENARIO WITH ADDED FLAT PENSION AND TRANSITION PERIOD

Under option 2, the cost at the beginning of the projection may represent an important fiscal burden to the government. To overcome this challenge, a transitional mechanism can be introduced. Under this approach, the targeted population on the introduction of the flat pension can be older than age 60. The following figure shows the cost under an approach where at the beginning, the flat pension is paid to people aged 70 and above. After 5 years, the eligibility age is decreased to age 65 and after 10 years of existence, everyone aged 60 and above is eligible to receive the flat pension.

Under this scenario, the burden to the state would be approximately 0.35 per cent of GDP at the launch in 2018. This cost would rise every five years as the eligibility age is lowered to reach a maximum of 0.9 per cent of GDP in 2030. The cost then drops sharply until it reaches 0.3 per cent of GDP at the end of the projection period.

This transitional approach will lower the burden of Government expenditure considerably; however, it will not greatly affect the cost of the new pension scheme for the private sector. The GAP for 50 years and 100 years remain almost unchanged, because in the beginning, people have not yet accumulated many years of service and the government will assume the cost of the flat pension. This remains true regardless of eligibility age.

Figure 20 – Projected cost of the flat pension in relation to GDP with a transition mechanism, option 3, 2018–2117 (percentages)



7. CONCLUSION AND RECOMMENDATIONS

Today, for every elderly person aged 55 and above there are six people aged 15–55. Within 50 years, there will be only 1.6. people aged 15–55 for every elderly person. In the absence of pension system, this will lead to an unbearable increase on the financial burden for families, which in many cases are already financially vulnerable. This context can also place particular pressure on pension PAYG schemes, and illustrate the importance of appropriate long-term planning for pension systems.

As life expectancy continues to rise, more Cambodians will reach retirement age and will require pensions for a longer period of time. For policy makers, this means that the system will be increasingly costly, but also that there will be a stronger demand from the society for a good pension system, as working adults will not be able to cope with increasing costs for their parents.

The actuarial review shows that a fully funded DC scheme represents a high level of risk for a country like Cambodia, where high salary growth will continue to be the norm. These risks are exacerbated by the undeveloped nature of the country's financial markets. Cambodia does not currently have a financial market that can support a funded pension system.

In 2015, the average proportion of the year where a contribution was paid was 7.2 months, meaning that even the core of the formal sector is actually informally employed for almost half the year. For long-term benefits such as pensions, it means that workers will accumulate years of service very slowly, which could significantly affect the level of their pensions.

The NSSF population comprises only 13 per cent of all employed people in Cambodia, meaning that for the purpose of social security coverage, the remaining 87 per cent are effectively informal. In addition, the probability of formal workers being re-employed in the informal sector is very high. Consequently, designing a pension system tailored only to the formal sector will exclude the majority of workers, and will also not be fully effective for those who can participate in the contributory pension scheme.

The results of the actuarial valuation point to the need for a diversified system, which strategically links contributory and non-contributory systems. In particular, the introduction of a noncontributory social pension for people aged 60 and above is the only way to provide old age protection to a significant part of the workforce.

Table 5 – Summary of results for NSSF pension projections (2016–2115)

	OPTION 1	OPTION 2	OPTION 3
PAYG rate in 2018	0.5	0.5	0.5
PAYG rate un 2115	34.8	35.4	35.4
GAP over a period of 50 years	11.5	12.1	12.1
GAP over a period of 100 years	19.6	20.3	20.3

Option 2 presents a base scenario that is in line with ILO Minimum Standards, and can thus be a good foundation for discussion as the Government and social partners establish their expectations with regards to this new system. As an example of this, the report develops option 3, where the mandatory DB system is linked to the non-contributory social pension through the introduction of a flat pension. The projections show that by providing a solid social protection floor, this flat pension could (1) ensure everyone has minimum old age protection without introducing an inefficient minimum pension; and (2) avoid removing incentives to contribute. This is an example of an integrated pension system tailored to the informal reality of the Cambodian labour market.

A rapid expansion of old age protection is necessary to protect the country's gains in poverty reduction and prepare for the aging of the population. Integrating the contributory system and social assistance benefits is the only way to ensure equitable coverage for the population as a whole. Equitable public spending could be achieved by using the savings made through the reform of the public pension system to finance increased spending on social assistance, starting with a flat old age

ANNEX I: MAIN DEMOGRAPHIC AND ACTUARIAL ASSUMPTIONS AND DESCRIPTION OF THE MODEL

MAIN ACTUARIAL ASSUMPTIONS

The ILO actuarial projection model relies on demographic and economic assumptions about the general population, economic growth, the labour market and the increase and distribution of wages. Other economic assumptions are related to the future rate of return on investments, the indexation of benefits and the adjustment of parameters, such as the maximum insurable earnings and the future level of flat-rate benefits. The selection of assumptions for projections considered the recent experience of the scheme to the extent that this information was available.

The actuarial study on which this policy paper is based used the following main assumptions:

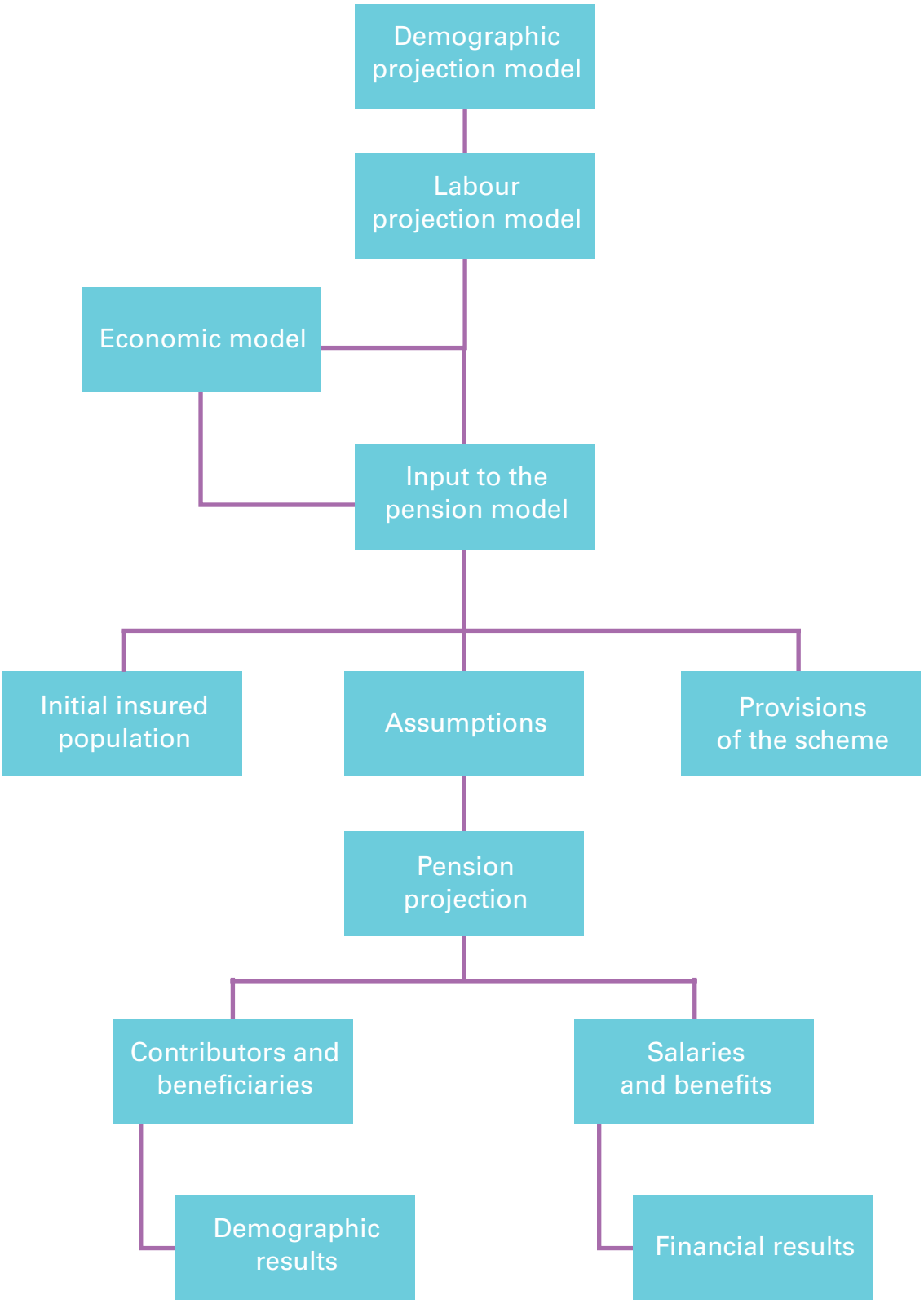
- According to official data, the total fertility rate was 2.73 in 2013. It is expected to decrease to 1.8 after 30 years.
- The ratio of the net migrants over the total population is about -0.2 percent at the beginning of the projection period and about -0.1 percent 35 years later.
- Life expectancy at age 60 is projected to increase over the next 50 years of projection from 16.4 to 23.2 years for males and from 17.9 to 24.8 years for females.
- The average growth of the insured population in the private sector is 3.0 percent per year during the first 25 years of projection and 0.3 percent for the next 25 years.
- Inflation is expected to be at 3 percent over the entire projection period, except for the first projection years.
- For the private sector, the salaries are projected in a context of high salary growth at the beginning of the projection period decreasing to a long-term assumption. Over the first 50 years of projection, salaries are expected to increase annually by 7.4 percent. The longterm assumption is 4.7 percent which is the same as the labour productivity.
- The return on the assets invested is 6.1 percent.

THE ACTUARIAL MODEL

The actuarial review uses a comprehensive methodology developed at the ILO for reviewing the long-term actuarial and financial status of national pension schemes. The review was undertaken by modifying the generic version of the ILO modelling tools to fit scheme's situation. These modelling tools include a population model, an economic model, a labour force model, a wage model, a long-term benefits model.

The following figure illustrates the structure of the ILO model.

Figure AI.1 – The structure of the ILO actuarial model



AI.1 General population

The general population is projected by starting with the most current data on the general population and applying appropriate mortality, fertility and migration assumptions.

AI.2 Active population and employed population

The projection of the labour force, i.e. the number of people available for work, is obtained by applying assumed labour force participation rates to the projected number of people in the general population. An unemployment rate is assumed for the future, and aggregate employment is calculated as the difference between labour force and unemployment. Growth in the insured population is linked to the growth in the employed population. In this model, the insured population is projected by starting with the most current data on insured participants, and then applying appropriate mortality, disability and retirement rates.

AI.3 Economic growth and inflation

Labour productivity increases and inflation rates are external inputs to the economic model. Real rates of economic growth are derived using the ILO economic projection model.

AI.4 Salaries

A starting average wage is normally calculated by dividing the wage share of GDP by the total number of employed. In the medium term, real wage development is checked against labour productivity growth. In specific labour market situations, wages might grow faster or slower than productivity. However, due to the long-term perspective of the present study, the real wage increase is assumed to gradually converge with real labour productivity. In this model, to consider the long-term perspective of the actuarial valuation, the long-term real wage increase is based upon a long-term assumption which is in line with assumptions observed in other actuarial valuations and a long-term view of the economy.

Wage distribution assumptions are also needed to simulate the possible impact of the social protection system on the distribution of income, for example, through minimum and maximum pension provisions. Data on the wages by age and sex as well as on the dispersion of wages are used in the projection. Average earnings, which are used in the computation of benefits, are also projected.

AI.5 Pension projection approach

Pension projections require the demographic and macroeconomic framework already described and, in addition, a set of assumptions specific to the social insurance scheme. The database, as at the valuation date, includes the active insured population, the distribution of insurable wages among contributors and the distribution of past credited service and pensions in payment, if applicable. Data are disaggregated by age and sex. Scheme-specific assumptions, such as disability incidence rates, density of contribution and the distribution of retirement by age, are determined with reference to scheme provisions and the scheme's historical experience if available.

Pension projections are made following a year-by-year cohort methodology. Projections for pensions are made separately for each gender. The existing population is aged and gradually replaced by successive cohorts of participants on an annual basis according to the demographic and growth of the insured population assumptions. The projection of insurable earnings and 38 benefit expenditures are then made according to the economic assumptions and the scheme's provisions.

Pensions are long-term benefits. Hence, the financial obligations that a society accepts when adopting financing provisions and benefit provisions for them are also of a long-term nature: participation in a pension scheme extends over a whole adult life, either as contributor or beneficiary, i.e. up to 70 years for someone entering the scheme at the age of 16 years, retiring at the age of 65 years and dying some 20 or so years later. During their working years, contributors gradually build entitlement to pensions that will be paid even after their death, to their survivors.

It is not the objective of pension projections to forecast the exact progression of a scheme's income and expenditure, but to verify its financial viability. This entails evaluating the scheme about the relative balance between future income and expenditure. This type of evaluation is essential, especially in the case of new pension scheme, which has not yet reached its mature stage.

ANNEX II: NSSF ILLUSTRATION OF THE CALCULATION OF MONTHLY PENSIONS ACCORDING TO THE DIFFERENT OPTIONS

AII.1 OPTION 1: THE BASE SCENARIO

Under option 1, people become eligible at age 60 to receive a pension based on their years of contribution.

Aged 60 in 2019, Chenda has no years of contribution, and would not be eligible to receive a pension under option 1 without a grandfathering provision.

CHENDA: NORMAL RETIREMENT PENSION UNDER OPTION 1	
Retirement date:	2019
Pensionable total salary on retirement:	KHR880,000
Credited service:	0 years
Chenda's pension calculation on retirement	(1.75% x 0) x KHR880,000 = 0
Effective income replacement rate on retirement	0% (KHR 0 / 880,000)
Total NSSF pension from age 60	KHR0 per month

With a grandfathering provision, people over the age of 30 are eligible to receive additional service credit after contributing for 24 months in the first 3 years. The additional service granted is half the period between the age at the time of affiliation and age 30.

For example, after contributing for 24 months, Chenda would be elible for a pension in 2021 at age 62. The grandfathering provision gives Chenda an additional 15 years of service ((60 – 30) x 50 per cent), for a total of 17 years of credited service.

CHENDA: NORMAL RETIREMENT PENSION UNDER OPTION 1 WITH GRANDFATHERING PROVISION	
Retirement date:	2021
Pensionable total salary on retirement:	KHR880,000
Credited service:	17 years (2+15)
Chenda's pension calculation on retirement	(1.75% x 15 + 1.25% x 2) x KHR880,000 = KHR253,000
Effective income replacement rate on retirement	28.75% (KHR253,000 / 880,000)
Total NSSF pension from age 62	KHR253,000 per month

Aged 50 in 2019, Sopheap has the chance to contribute for 10 years. Sopheap will be eligible for retirement in 2029

Note: the salary is higher because we are projected in 10 years.

SOPHEAP: NORMAL RETIREMENT PENSION UNDER OPTION 1	
Retirement date:	2029
Pensionable total salary on retirement:	KHR2,400,000
Credited service:	10 years
Chenda's pension calculation on retirement	(1.75% x 10) x KHR2,400,000 = KHR420,000
Effective income replacement rate on retirement	17.5% (KHR420,000 / 2,400,000)
Total NSSF from age 60	KHR420,000 per month

With a grandfathering provision, after contributing 24 months in the first 3 years, Sopheap would be eligible to receive additional years of credited service in 2029. The grandfathering provision gives Sopheap an additional 10 years of service ((50 – 30) x 50%).

Note: the salary is higher because we are projected in 10 years.

SOPHEAP: NORMAL RETIREMENT PENSION UNDER OPTION 1 WITH A GRANDFATHERING PROVISION	
Retirement date:	2029
Pensionable total salary on retirement:	KHR2,400,000
Credited service:	20 years (10+10)
Chenda's pension calculation on retirement	(1.75% x 15 + 1.25% x 5) x KHR2,400,000 = KHR780,000
Effective income replacement rate on retirement	32.5% (KHR420,000 / 2,400,000)
Total NSSF from age 60	KHR780,000 per month

AII.2 OPTION 2: THE BASE SCENARIO WITH ADDED FLAT PENSION

Option 2 offers the base scenario of option 1 with the addition of a flat pension equal to 50 per cent of the poverty rate. At age 60, people are eligible to receive a flat pension of KHR75,000 per month.

Aged 60 in 2019, Chenda is eligible for the flat pension.

CHENDA: NORMAL RETIREMENT PENSION UNDER OPTION 2	
Retirement date:	2019
Pensionable total salary on retirement:	KHR880,000
Credited service:	0 years
Chenda's pension calculation on retirement	(1.75% x 0) x KHR880,000 + KHR75,000 = KHR75,000
Effective income replacement rate on retirement	8.52% (KHR75,000 / 880,000)
Total NSSF from age 60	KHR75,000 per month

With a grandfathering provision, people over the age of 30 are eligible to receive additional service credit after contributing for 24 months in the first 3 years. The additional service granted is half the period between the age at the time of affiliation and age 30.

With a grandfathering provision, Chenda would be eligible for a pension in 2021 after contributing for 24 months. The grandfathering provision gives Chenda an additional 15 years of service ((60 – 30) x 50%), for a total of 17 years credited service.

CHENDA: NORMAL RETIREMENT PENSION UNDER OPTION 2 WITH GRANDFATHERING PROVISION	
Retirement date:	2021
Pensionable total salary on retirement:	KHR880,000
Credited service:	17 years
Chenda's pension calculation on retirement	(1.75% x 15 + 1.25% x 2) x KHR880,000 + 75,000 = KHR328,000
Effective income replacement rate on retirement	37.27% (KHR328,000 / 880,000)
Total NSSF from age 62	KHR328,000 per month

Aged 50 in 2019, Sopheap will be eligible for retirement in 2029 with 10 years of contribution. Sopheap's pension will include the flat pension of KHR75,000 per month in addition to the amount calculated on the basis of years of contribution.

SOPHEAP: NORMAL RETIREMENT PENSION UNDER OPTION 1 WITH A GRANDFATHERING PROVISION	
Retirement date:	2029
Pensionable total salary on retirement:	KHR2,400,000
Credited service:	10 years
Chenda's pension calculation on retirement	(1.75% x 10) x KHR2,400,000 + KHR75,000 = KHR495,000
Effective income replacement rate on retirement	20.63% (KHR95,000 / 2,400,000)
Total NSSF from age 60	KHR495,000 per month

With a grandfathering provision, after contributing 24 months in the first 3 years, Sopheap would be eligible to receive additional credited years of service in 2029. The grandfathering provision gives Sopheap an additional 10 years of service ((50 – 30) x 50%), for a total of 20 years of credited service.

SOPHEAP: NORMAL RETIREMENT PENSION UNDER OPTION 2 WITH GRANDFATHERING PROVISION	
Retirement date:	2029
Pensionable total salary on retirement:	KHR2,400,000
Credited service:	20 years
Chenda's pension calculation on retirement	(1.75% x 15 + 1.25% x 5) x KHR2,400,000 + KHR75,000 = KHR855,000
Effective income replacement rate on retirement	35.63% (KHR855,000 / 2,400,000)
Total NSSF from age 60	KHR855,000 per month

AII.3 OPTION 3: THE BASE SCENARIO WITH ADDED FLAT PENSION AND TRANSITION PERIOD

Option 3 offers the base scenario of option 1 with the addition of a flat pension and a transitional mechanism that gradually reduces the age of eligibility for the flat pension over the first ten years of the scheme. In the first five years of the scheme, people are eligible at age 70 to receive a flat pension of KHR75,000. After 5 years of the scheme's operation, the eligibility age is lowered to age 65, and after 10 years of operation, the eligibility age is 60.

Aged 60 in 2019, Chenda will be eligible for the flat pension five years later, at age 65 in 2024.

Note: in this example, the individual is going to receive an additional amount of 75,000 per month starting at age 65.

CHENDA: NORMAL RETIREMENT PENSION UNDER OPTION 3	
Retirement date:	2019
Pensionable total salary on retirement:	KHR880,000
Credited service:	0 years
Chenda's pension calculation on retirement	(1.75% x 0) x KHR880,000 = 0
Effective income replacement rate on retirement	0% (KHR 0 / 880,000)
Total NSSF pension from age 60	KHR0 per month
Total NSSF from age 65	KHR75,000 per month

With a grandfathering provision, people over the age of 30 are eligible to receive additional service credit after contributing for 24 months in the first 3 years. The additional service granted is half the period between the age at the time of affiliation and age 30.

With a grandfathering provision, Chenda would be eligible to receive a pension in 2021 after contributing for 24 months. The grandfathering provision gives Chenda an additional 15 years of service ((60 – 30) x 50%), for a total of 17 years of credited service. In additional, Chenda will become eligible for the flat pension at age 65 in 2024.

Note: in this example, the individual will receive an additional amount of KHR75,000 per month starting at age 65.

CHENDA: NORMAL RETIREMENT PENSION UNDER OPTION 3 WITH GRANDFATHERING PROVISION	
Retirement date:	2021
Pensionable total salary on retirement:	KHR880,000
Credited service:	17 years
Chenda's pension calculation on retirement	(1.75% x 15 + 1.25% x 2) x 880,000 = 253,000
Effective income replacement rate on retirement	28.75% (KHR253,000 / 880,000)
Total NSSF pension from age 60	KHR253,000 per month
Total NSSF from age 65	KHR328,000 per month

Aged 50 in 2019, Sopheap will be eligible for retirement in 2029 with 10 years of contribution.
By 2029, the eligibility age for the flat pension will be 60, so Sopheap's pension will include the flat pension of KHR75,000 per month in addition to the amount calculated on the basis of years of contribution.

SOPHEAP: NORMAL RETIREMENT PENSION UNDER OPTION 3	
Retirement date:	2029
Pensionable total salary on retirement:	KHR2,400,000
Credited service:	10 years
Chenda's pension calculation on retirement	(1.75% x 10) x KHR2,400,000 + 75,000 = KHR495,000
Effective income replacement rate on retirement	20.63% (KHR495,000 / 2,400,000)
Total NSSF from age 60	KHR495,000 per month

With a grandfathering provision, after contributing 24 months in the first 3 years, Sopheap would be eligible to receive additional credited years of service in 2029. The grandfathering provision gives Sopheap an additional 10 years of service ((50 – 30) x 50%), for a total of 20 years of credited service.

Note: the salary is higher because we are in 10 years.

SOPHEAP: NORMAL RETIREMENT PENSION UNDER OPTION 3 WITH GRANDFATHERING PROVISION	
Retirement date:	2029
Pensionable total salary on retirement:	KHR2,400,000
Credited service:	20 years
Chenda's pension calculation on retirement	(1.75% x 15 + 1.25% x 5) x KHR2,400,000 + 75,000 = KHR855,000
Effective income replacement rate on retirement	35.63% (KHR855,000 / 2,400,000)
Total NSSF from age 60	KHR855,000 per month

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