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Multi-Pillar Pension policy implementation and retirement income security: Lessons for developing countries

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Abstract:

Pension policies have implications on national budgets. Therefore, there is a need for countries aspiring for adequate protection of the aged to be assisted with comprehensive pension policies. A multi-pillar pension system proposed by the World Bank is designed to achieve this goal. This paper employs a narrative literature and document review approach to data gathering, following a thematic method of analysis to evaluate the pension systems of Chile, Mauritius, Singapore, and Ghana following the recommendations of the World Bank. The comparative study also explores pension challenges faced by these countries and mitigation measures adopted. Some of the findings include inadequate pensions, sustainability threats, pension inequality, investment risks, a lack of robustness, weak supervision, and labour market distortions. In addition, the system is not affordable to private-sector employers in some of the selected countries. The paper has developed a framework for developing countries to improve participation in funded pension schemes. Further recommendations made for pension systems of developing countries include effective monitoring and supervision, flexible and regular contribution methods, ensuring the security of funds through multi-fund investment options, and introduction of automatic pension enrolment by setting a low amount affordable to the low-income worker. Where the population is aging, an extension of retirement age or maintaining workers on the job beyond retirement may be an option to improve the sustainability of funds.

Keywords: Social Security; Income Security; Multi-Pillar Pension Systems; Pension System Challenges; Pension System Reforms; Pension Models.

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1. Introduction

Withdrawing completely from the labour market due to old age requires adequate financial preparations to meet the demands of retirement. This is essential because the poor may not earn sufficient income or may simply not be in a position to save towards old age. The rich on the other hand may fail to plan or postpone retirement savings until it becomes too late. When these happen, the burden falls on the government to meet the needs of these individuals in old age. As a result, governments all over the world put in place pension programmes to ensure that the aged are financially protected. Pension arrangements usually take two main forms: funded schemes based on individuals' accumulation of financial assets and Pay-As-You-Go (PAYG) schemes which are based on financial commitments usually from the government. The nature of pension schemes depends on first, the fiscal position of the government, the macroeconomic environment of the country, the demographic structure of the population, and sometimes the population policy. Second, the scheme determines whether or not pension burdens must be borne completely by individuals, or partially or wholly by the government.

The persistent fiscal burden on government budgets especially in most developing countries has necessitated a shift away from a single-pillar pension system usually financed by the government to a multi-pillar system that shares pension responsibility with individuals or completely transfers it to them. The situation becomes worse when the elderly have to completely rely on the government for financial relief during retirement. For nations that have adopted the multi-pillar pension policy, what are their experiences? Are the aims of the system adequately met as intended? To provide answers to these questions, the World Bank (2005) has recommended multi-pillar pension systems intending to relieve governments that are fiscally overburdened. The World Bank (2005) provided a comprehensive evaluative framework to assist countries that have adopted this policy. These recommendations imply that beneficiaries of pension schemes must also be responsible for their future financial burdens.

This paper explores the multi-pillar pension implementation experiences of Chile, Mauritius, Singapore, and Ghana. The comparative analysis presents an assessment of the current pension systems taking the World Bank multi-pillar pension evaluation model as a point of departure. The paper further explores the implementation challenges of the pension systems, the measures adopted to overcome such constraints, and lessons that can be learned by developing countries.

The selection of countries for analysis is based on the following criteria- the assistance received from the World Bank's pension reform programmes, the availability of adequate information and data, practical experiences from pension system reforms, and belonging to different stages of economic development in terms of per capita Gross National Income (GNI). Whereas Chile and Singapore are classified as high-income economies, Mauritius is an upper-middle-income country, and Ghana is a lower-middle-income nation (World Economic Situation and Prospects, 2014). The income and pension system transformations of these nations leave many lessons for other developing countries.

Ghana migrated to the multi-pillar pension system recommended by the World Bank in 2008. However, it has emerged that the first batch of beneficiaries in 2020 was paid amounts far lower than what they would have received under the previous scheme (Ghana Trade Union Congress, 2020).

Chile on the other hand has been known for its adherence to the World Bank's core principle of pension regulations and related guidelines (OECD, 2013). It has also been known that the country has a sound pension supervisory framework (Obiri-Yeboah, 2014). In 2019, Chile's pension system was rated grade B with the Melbourne Mercer Global Pension Index range of 65-75. This indicates a pension system that has a sound structure with many good features (Melbourne Mercer, 2021).

Furthermore, Mauritius is among the first developing countries to have established a universal pension scheme that functions as the foundation pillar of the broader pension system (Willmore, 2007). The World Bank (2004) has lauded Mauritius for providing the most coverage of any pension scheme in Sub-Sahara Africa. The un-

funded nature of Mauritius' universal pension scheme, together with the income maintenance scheme of the civil service is worth studying.

Lastly, the pension system of Singapore comes under scrutiny. According to the World Bank (2008), Singapore is one of the advanced developing countries that has the best pension system in Asia. The country ranked the seventh-best pension system in the world, accumulating an overall index of 69.4 in 2017 (Melbourne Mercer, 2017). The pension system of Singapore is organized on national provident fund principles. Studying the features and mechanisms of this pension system may be very useful for developing countries.

2. Literature Review

2.1 The World Bank's Multi-Pillar Pension Modalities

The World Bank's multi-pillar pension model flexibly applies a five-pillar design. The model outlines the range of design elements that govern pension system modalities and reform options. It is often emphasized that the model be applied circumspectly to specific countries in a manner that will yield a range of achievable options. The suggested multi-pillar pension systems in the new conceptual framework are composed of a combination of five basic elements (World Bank, 2008) that are summarized in Table 1.

Table 1: Summary of the modalities for achieving the World Bank multi-pillar pension model

Pillar	Objective	Form	Target groups	Funding
A non-contributory zero-pillar	Elderly poverty protection	Publicly funded pension (universal)	Lifetime poor, informal, and formal sector	Budget/general revenues
A mandatory First pillar	Elderly poverty protection and consumption smoothing	Publicly managed mandatory contributory plans (largely financed on a PAYG basis)	Formal sector	Taxed financed
A mandatory Second pillar	Elderly poverty protection and consumption smoothing through a minimum pension.	Privately managed, mandatory occupational or private contributory pension plans	Formal sector	Financial assets
A voluntary Third pillar	Consumption smoothing	Voluntary savings to occupational or private pension plans	Lifetime poor, informal, and formal sector	Financial assets
A non-financial Fourth pillar	Elderly poverty protection and consumption smoothing	Public services, family support, and personal assets	Lifetime poor, informal, and formal sector	Financial and nonfinancial assets

Source: World Bank (2005)

It is argued that developing well-supervised voluntary schemes could effectively serve as a supplement to the low income of the informal worker at retirement (World Bank, 2005). It is further argued that the mandatory first and second pillars may not yield adequate old-age income, but that a combination of Pillar Zero and a more extensive voluntary pillar may improve the pension system. Finally, public policies that support the transfer of

family wealth, through land and asset titling and inheritance laws can strengthen old-age income security for both the lifetime poor and informal workers.

2.2 The World Bank Multi-Pillar Pension Framework

After the consideration and application of the five-pillar pension model, the World Bank (2008) further proposes that the entire pension system design be evaluated with the aid of the criteria discussed next.

2.2.1 Primary Evaluation Criteria

i) Adequacy: This addresses the need for the pension system to provide benefits sufficiently to the entire population to prevent old-age poverty at a country-specific level.

ii) Sustainability: The framework requires that the pension system possesses a sound financial standing that can be maintained over a long period.

iii) Affordability: It is required that the pension system must be within the financing capacity of individuals and their respective nations and should not impose a heavy fiscal burden on the state or unduly displace support for other social or economic needs.

iv) Equitability: An equitable pension system requires that some redistribution occurs by channeling income from wealthy individuals to the lifetime poor to promote social fairness.

v) Predictability: A predictable pension system requires a legal benefit formula upon which computations are based. Arbitrary determination of benefits by policymakers or managers infringes on the transparency and fairness of the system. The computation formula protects individuals against price fluctuations and market volatility.

vi) Robustness: A robust pension system refers to the ability of the system to withstand major economic, demographic, and political shocks.

Secondary Evaluation Criteria

Besides the primary criteria, The World Bank (2005) extended the pension systems framework to include secondary evaluation criteria which seek to evaluate the system's contribution to output and growth. This consideration is based on the fact that any well-functioning pension system modeled on the aforementioned criteria is capable of ensuring economic growth and stability. The relevant criteria in this respect include:

- Minimization of labor market distortions.
- Contribution to savings mobilization, and
- Contribution to financial market development.

3. Methodology

This research employed a document review method of data gathering, synthesis, processing, and analysis. According to Bowen (2009), analysing documents entails categorizing contents into themes similar to how focus groups or interview transcripts are analysed. This study adopted document review for reasons that conformed to Bowen (2009) which states that; documents provide stable data sources, which can be verified at any point in time if the documents are accessible. Secondly, obtaining and analysing documents is often far more time and

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cost-efficient than conducting surveys or experiments. Thirdly, making use of document analysis can ensure that the research covers the topics investigated comprehensively.

The process involves attentive and careful sorting of data by the researcher with much focus on re-reading and categorizing data according to the World Bank (2005) Multi-Pillar Pension Evaluation Criteria which constituted the theme for data analysis. The study draws on pension literature for the selected countries published in academic journals and manuals, individual papers, published institutional records, newspapers, website documents, and other relevant sources which are all duly referenced. The materials were selectively structured devoid of any biases. The structure of the model and the criteria for evaluation are summarized in section 2.2.

4. Case Studies

This discussion presents an assessment of the current multi-pillar pension system in Chile, Mauritius, Singapore, and Ghana against the pension evaluation criteria of the World Bank (2005). This enables the researcher to compare the achievements and constraints of the pension systems of these countries.

4.1 The Pension System of Chile

According to World Factbook (2020), Chile is in the advanced stages of demographic transition and is becoming an aging society. Life expectancy in the country is on par with developed countries with the 2023 figure at 80.74 years. Chile has been at the forefront of pension reforms since 1980 when it switched to a private pension system. Having shown positive signs of success during its operation, the World Bank has recommended similar policies to other countries (Rodrigo & Augusto, 2001). Chile currently has a three-pillar pension system managed by either state-owned or private firms known in English language as Pension Fund Administrators (AFPs) (ICPM, 2018). Table 2 summarizes the Chilean three-pillar pension system.

Table 2: Summary of the Chilean Multi-Pillar Pension System

Pillar	Objective	Form	Target groups	Funding
Non-contributory First pillar	Elderly poverty protection and consumption smoothing through minimum pension	Publicly funded for the elderly without pension and the poorest 60% of the population.	Lifetime poor, informal, and formal sector workers	State/Tax-financed
Mandatory Second pillar	Elderly poverty protection and consumption smoothing	Privately managed by AFPs and financed on a fully funded basis. i.e. 10% of the worker’s gross salary plus AFP charge of 0.77%-1.45% on the worker’s salary)	Formal and informal sector workers plus self-employed	Fully funded by individual/Employer contribution
Voluntary Third pillar	Consumption smoothing	Voluntary contributions to AFPs or other private institutions in three Forms, namely: 1. Voluntary Pension Savings. 2. Collective Voluntary Pension Savings 3. Voluntary Savings Account	Lifetime poor, informal, and formal sector	Fully funded by individual

Source: Author (2023)

The Chilean system allows only employees to contribute a part of their income into a pension account. This means that in Chile, there are no employer contributions to workers’ pensions.

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Adequacy: Pension policies in Chile failed to provide adequate coverage to pensioners. The AFPs make huge profits but fail to distribute more benefits to pensioners (Bond, 2016). The national pension coverage (the percentage of contributors over the total number of the employed workforce) was 71 percent while 58 percent of the contributors to the AFP system were men and 42 percent were women (Association of AFPs, 2015). Some Chileans regard the AFP as the worst thing that has happened to the Chilean pension system (Borzutzky & Hyde, 2015). Furthermore, the government's provision of the redistributive Pillar-1(a scheme to relieve the aged poor) is largely perceived as insufficient (Borzutzky & Hyde, 2015). These deficiencies have contributed to keeping almost 20 percent of the retirees below the poverty level. According to Bradley (2016), in terms of adequacy, the Chilean pension system promised a replacement ratio of 70 percent when it was launched in 1981while the OECD (2019) noted that the actual replacement rate in Chile for an average earner is 40 percent for men and 36 percent for women, which is far below the OECD average of 60 percent. According to the Centre for National Studies of Alternative Development (2018), the Chilean pension replacement rate has declined on average from just over 40 percent in 2006 to 27.4 percent in 2018. The decline in the replacement rate may be attributed to the low contribution rate, irregular contribution history, evasion, and unemployment.

Sustainability: The sustainability of the Chilean pension system raised concerns. According to Bond (2016), the AFPs deliberately pay low pensions to maintain the sustainability of the system. During public protests against the Chilean pension system in March 2019, protesters claimed that "we do not have a solidarity system. The quality of life of the elderly is not good, some are even taking their own lives, that is why we are here saying clearly no more AFP" (Telesur, 2019). In their view, the current pension system is a disadvantage to contributors and pensioners since employers are not mandated to contribute towards workers' retirement. To rectify this situation, they recommend a tripartite public system with a distribution model of finance among workers, employers, and government. This could alleviate the pressure on both workers and retirees, while at the same time make the system sustainable.

Affordability: One of the problems with the Chilean pension system that concerns contributors is the high administrative fees charged by the AFPs. According to Bradley (2016), what may be contributing to the high fees charged by the AFPs is the limited number of fund administrators (only six) compared to the 1990s when there were twenty of them. Subsequently, this has resulted in a lack of competition with negative implications for fees and efficient management (Bradley, 2016). It is therefore not surprising that only 7.7 percent of the self-employed were listed on the pension system (Association of AFPs, 2015). New pension administrators should be admitted to enhance competition and reduce costs.

Equitability: According to Fajnzylber (2012), the Solidarity Pillar (APS) brought some level of income redistribution by providing non-contributory benefits to individuals with low pensions. The APS scheme guarantees all lower-income individuals a guaranteed basic pension regardless of their contribution history. The scheme also provides old age and disability subsidies financed by general taxes. Consequently, poverty among the elderly decreased by 2.7 percent by 2015 (Mesa-Lago & Bertranou, 2016). Despite the introduction of the APS in 2008, Mesa-Lago and Bertranou (2016) opined that the Chilean pension system also enhances gender inequalities aside the differences in pensions. Women usually have unequal access to jobs, work histories, and earnings which translates into poor pension benefits. For example, from 2007 to 2014, half of the retired women obtained monthly benefits equal to or less than $42.56 whilst men received benefits equal to or less than $112.33 (Bertranou, 2016).

Predictability: This determines how benefits are computed and paid to retirees. Benefit computation in the Chilean system is based on members' contribution history, the amount accumulated in the fund, and capital market performance on invested funds. Upon retirement, retirees have the followings options to choose from: Capital accumulated can be used to buy an immediate life annuity, get temporary income with a deferred life annuity, take a complete programmed withdrawal (PW) from the pension system or it may be split partly to buy an immediate life annuity and take a programmed withdrawal later. The fund administrator later converts the invested fund into a monthly payout according to a formula determined by the government. Any remaining

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amount in the account after death is paid to the next of kin (Mitchell & Ruiz, 2009). In the case of an annuity, a retiree may use the balance in his account to purchase a life annuity from a life insurance company. Although annuitization is not mandatory in Chile, almost 60 percent of all retirees are taking annuities (Iglesias-Palau, 2009).

Robustness: There is a high level of uncertainty in Defined Contribution (DC) pension systems because benefits depend on the rate of return earned on invested funds (Ortiz, Duran-Valverde, Urban, & Wodsak, 2018). A defined Contribution plan provides the employee the option to receive either a lump sum amount or an annuity, or a combination of both that is determined solely by the total contribution and investment outcomes. Chile also suffered from the 2008 Global Financial Crisis. The AFPs lost 60 percent of all accrued pension benefits in 2008. The result of the crisis led to the termination of contributions by some workers who had irregular, part-time, or insecure jobs. The long-term effect will most likely be old age poverty, dependence on the state-funded pillar, or a growing demand for supplementary benefits for retirees or a pension subsidy in the benefit calculation formula. During the Global Financial Crisis in 2008, the mandatory pillar of the Chile pension fund had an equity exposure of 48 percent of total assets, and it reported a negative performance of 16.4 percent (Impavido & Tower, 2009). Again, the Covid-19 pandemic in 2020 did not spare Chile's DC pension system. As of April 2021, the crisis led to emergency withdrawals of 10 percent of pension savings to help meet contributors' immediate basic needs (Kay & Borzutzky, 2022). However, one could argue that these uncertainties were extreme occurrences and would always be a possibility. Therefore, citizens must be educated to allay such mistrust.

Labour Market Impact: Chile's pension system has an impact on the labour market (Attanasio et al., 2011). The introduction of the redistributive pillar in the 2008 Chilean pension reforms has created a disincentive for some employees to contribute to the pension system. This is so because the pillar guaranteed low-income earners and individuals with no pension contribution history some minimum pension. This combined with the high administrative fee leads to evasion by the self-employed. For instance, it has reduced the formal labor market participation by 0.4 percent for workers above 40 years. In the same vein, it has reduced the probability of participation of women and older workers between 56 years and 65 years by 0.5 percent and 0.2 percent respectively (Attanasio et al., 2011). The Chilean pension system allows retirees to continue working for as long as they want. According to Barrientos (2002), 37.4 percent of people above 60 years still participate in the labour market. Receiving a pension, therefore, does not require one to completely withdraw from the labour market. The relatively low levels of pensions may also be a contributing factor.

Economic Growth: The study of Araneda (2019) observed that workers finance large corporations with their pension contributions during their working life through AFPs. AFPs invest in these corporations by investing in their stocks and bonds markets which further leads to the expansion of corporations, job creation, and economic growth.

4.2 The Pension System of Mauritius

This section discusses the current pension system of Mauritius after it adopted the World Bank's multi-pillar pension recommendations in 2005, the achievements of the schemes in reducing old-age poverty, and the challenges of the system. Pre-colonial Mauritius did not have a formal pension system; as a result, the aged depended on their families for their survival. The government later resorted to a tax-financed, non-contributory old-age pensions system, which was means-tested (Meade, 1961). Means-tested pensions are those where eligibility is based on a test of the income or assets of an individual. The programme targets the poor and excludes those who earned an annual income above a certain predetermined level. A major complaint of this system was the non-transparent nature in which it was conducted. It also became a disincentive to savings for low-income workers and those who wished to continue working beyond the actual retirement age. These problems led to pension reforms in 1976 when a contributory pension scheme that covers employees of both the public and private sectors was introduced alongside the basic non-contributory universal pension scheme. The reform was necessitated by the desire to increase national savings, and also to ensure at least moderate living standards for

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retirees (Willmore, 2001). According to Willmore (2001), the self-employed and employees who earned low salaries were exempted from contributing to this new scheme. This meant that not all public sector workers contributed to the scheme resulting in limited coverage. To address the challenges, the government of Mauritius adopted the World Bank's comprehensive pension systems reforms framework in 2005. This is summarized in Table 3.

Table 3: A summary of the multi-pillar pension scheme of Mauritius

	Basic Retirement Pension (BRP)	**Civil Service Pension Scheme (CSPS)**	**National Pension Scheme (NPS)**	**National Savings Fund (NSF)**	**Voluntary Schemes**	
Pillars	Zero Pillar	First Pillar		Second Pillar	Third Pillar	
Pension type	Public		Occupational	Mandatory	Occupational Voluntary	Personal Voluntary
Coverage	Universal	Civil service	Private sector	Private sector	Private sector	Private Sector
Funding	PAYG	PAYG	Funded	Funded	Funded	Funded
Contributions (% of wage)	Non-contributory	Worker only: 6%	Worker: 3% and employer: 6%	Worker: 1% and Employer: 2.5%	Worker:5-10% and Employer: 10-20%	Determine by contract
Pensionable age	60 years	65 years				

Source: Adapted from World Bank (2005)

The non-contributory BRP cash transfer program for the aged is to protect them from extreme poverty (Guven & Leite, 2016). Because of this, the total pension coverage in Mauritius is 100 percent. No elderly individual in the country is left unprotected but at a low replacement rate of less than 26 percent compared to 60 percent for the OECD countries (World Bank, 2004). The Mauritius pension system is a good example for Sub-Saharan Africa, if fiscal challenges, the constraints of voluntary private pension schemes are addressed, and replacement rates are raised. However, the small population (1.30 million in 2023) of this country must be kept in mind. Extending universal pension coverage to a relatively small population is less complicated and more manageable compared to countries with a higher population.

According to Guven and Leite (2016), challenges inherent in the BRP and the NPS include inaccurate data on the elderly, bureaucratic bottlenecks, the lack of autonomous fund administrators, and an independent governing board responsible for funds and assets management. The authors recommended greater investment of pension funds in reliable and credible financial market instruments such as; corporate securities and foreign assets to earn higher returns on investment. Such an outcome will require efficient, robust, and transparent structures. The failure to provide adequate oversight responsibilities regarding the management and investment of pension funds

may have far-reaching consequences for pension performance (Kay, 2003). An example is the financial scandal that hit the Mauritian NPS in 2003 when a time deposit of MUR 500 million could not be traced by the Mauritius Commercial Bank due to institutional lapses (Vittas, 2003). The World Bank (2015) argues that the real challenge for the Mauritius pension system is institutional. It posits that weak supervision and institutional quality are the major factors militating against the smooth performance of the NPS. It further indicates that indexation formulas for the pension pillars (BRP and NPS) are not strictly followed to determine benefits. A well-supervised and regulated governing board is required to curb such occurrences.

Adequacy: The NPS aimed at a replacement ratio of a third (33.3 percent) of the average salary for continuous contributions of 40 years which is relatively low compared to the OECD average of 60 percent. The World Bank (2004) reported that Mauritius was unable to achieve this target and could only obtain a replacement ratio of 26 percent after two decades of operation. This assessment is based on the poor use of the price index which is a vital determinant of the real value of benefits payable to retirees. Soto et al. (2015) found that with a contribution rate of 9 percent, workers who retire after 40 years of work should be able to earn a replacement ratio of 33.3 percent. However, in practice, the NPS adjusts the price index downwards, which leads to a low replacement ratio. The reason for this action is to enhance the sustainability of the fund, but this contradicts standard practices. For instance, the ILO prescribes a regular adjustment of indexes that will keep the replacement ratio at least at 40 percent (Soto et al., 2015).

Sustainability: According to the Mauritius Commission on Population and Development (MCPD-2019), the total fertility rate has decreased from 5.86 in 1962 to 1.345 in 2023 whilst life expectancy at birth increased from 65 years in 1965 to 75.51 years in 2023. This rising life expectancy coupled with the reduction in the total fertility rate threatens the long-term sustainability of the pension scheme as it increases the liabilities of the Defined Benefits (DB) pension plan. Defined Benefit pension schemes follow a pre-determined benefit formula, and the final benefits that accrue to contributors upon retirement are not solely dependent on their contributions. It is projected that without meaningful reforms the Mauritius Nation Pension Scheme (NPS) will exhaust its assets and eventually create liabilities which will make it difficult to finance after 2060 (Soto et al., 2015).

Affordability: Fiscal pressure in most economies creates concerns over how much countries can spend on pension programmes. Guven and Leite (2016) identify the fiscal affordability of the basic retirement pillar (BRP) as the main challenge. This author disclosed that the high administrative cost of private pensions in Mauritius is transferred to contributors. These fees discourage workers from joining private voluntary schemes. Estimates suggest that the fees a member of a private pension plan pays can account for up to 20 to 40 percent of his or her contribution, which is discouraging and excessive. The World Bank (2015) projects that with significant changes in the demography and declining tax revenue, the Mauritian government may not have the required financial resources to afford the basic universal pension and their contribution to the NPS.

Equitability: An equitable pension plan may put less emphasis on work history and does not link employee earnings to pension benefits (Kaplow, 2000). The Mauritian BRP promotes equity and provides relief to the aged poor. The system grants a flat or basic pension to all residents or citizens 60 years and above, and no other condition is required for eligibility. It is therefore a universal system and is especially beneficial to the vulnerable, women, and informal workers (Clements et al., 2014).

Predictability: The National Pensions Act of 1976 provides for the determination of pension benefits for all publicly managed pension schemes in Mauritius. A clear payment procedure is available for the non-contributory BRP scheme. The benefits of the BRP and CSPS are indexed for price fluctuation. For the CSPS plan, benefits are tax-financed through the government budget, and contributors know how much pension they will receive upon retirement. The CSPS pays 66.7 percent of the final salary after 33.3 years of contributions. However, the fiscal affordability of this system may hamper its predictability and sustainability.

Robustness: Fall and Bloch (2014) observed that the aging population and the reduction in the fertility rate put Mauritius' long-term financial stability of pensions at risk and make it more vulnerable to economic or political

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shocks. This can be ascribed to the fact that except for the basic pension pillar, the remaining pension contributions are either fully or partially financed by current workers; therefore, an increase in the number of pensioners without a commensurate rise in labour market participation or contribution rates, will exert undue fiscal pressures on government. According to David and Petri (2013), the current basic pension expenditure as a percentage of GDP will rise sharply by 4.5 percentage points between 2015 and 2050. This rapid rise poses a potential threat to macroeconomic stability. To address this problem the government in 2018 has increased the retirement age from 60 to 65 years for all pension pillars except for the basic pension pillar (BRP) which is still maintained at 60 years. This policy is to improve the position of pension funds to meet the pension needs of an aging population.

Labour market impact: The universal nature of the scheme may discourage higher-income earners from participating in contributory pension schemes (Levy & Schady, 2013). Mauritius' public sector employees are covered under a PAYG system, while the private sector has a fully funded scheme. This discrimination contributes to labour supply challenges as workers usually prefer public sector jobs to private sector ones (Deerpalsing, 2004).

Contribution to savings and financial market development: Pension funds usually constitute a substantial and necessary source of capital accumulation (Kangas, 2006). Mauritius pension funds have contributed significantly to the growth of the local stock market and the securities market (Mauritius Financial Services Commission, 2015). According to Yermo (2008), Mauritius pension funds improve liquidity in financial markets, and the NPS serves as an important source for housing loans to middle and high-income households and businesses.

4.3 The Pension System of Singapore

Singapore is a high-income economy with a per capita GNI of US$65,541 in 2022 (World Data Atlas, 2022). The country is currently experiencing an aging population and consequently an increased life expectancy at birth. In 2010, its life expectancy was 81.65 and this rose to 84.07 in 2023 which is one of the highest in the world. In 2019, 19.5 percent of Singaporeans were 65 years and above, and this number is estimated to rise to 32 percent and 40.1 percent by 2035 and 2050 respectively (World Population Prospect, 2019). Out of the total population of 5.92 million in 2023, 4.5 million were members of the pension fund (CPF Board, 2023). The nation operates a pension scheme that mainly revolves around a Central Provident Fund (CPF) which is widely acclaimed as one of the world's most successful DC pension schemes (Fong et al., 2010). The different pension accounts of the CPF form the multi-pillar scheme. According to Pundarik and Sunil (2014), the various components of the multi-purpose CPF accounts define how the CPF can be compared to the World Bank multi-pillar pension system except for the absence of pillar zero which is universal. Figure 1 summarises the objectives of the CPF scheme which are: improving old age income, creating easy access to homeownership, settling healthcare costs, financing citizens' tertiary education, financial protection for the family, and asset enhancement for members. It can therefore be regarded as a comprehensive social provision system.

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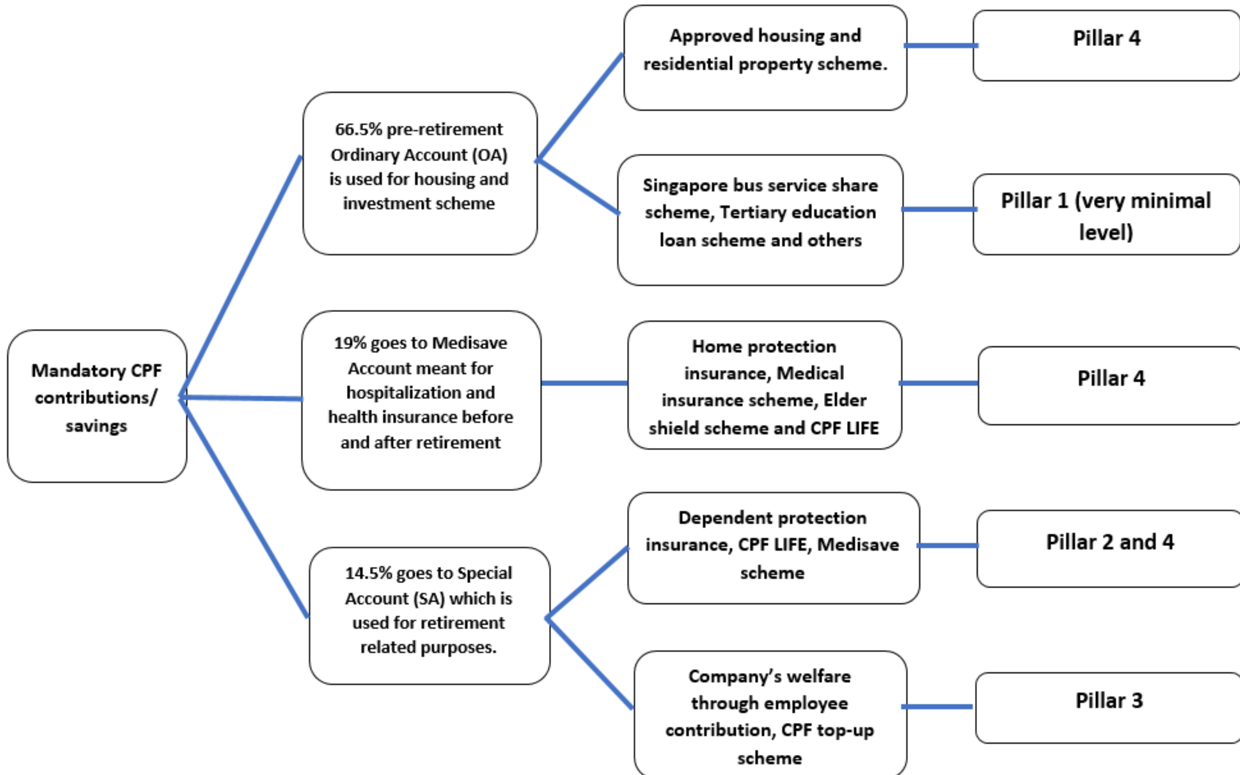

Figure 1: Singapore's CPF compared with the World Bank's multi-pillar pension system.

Source: Adopted from Pundarik and Sunil (2014)

The underlying principles of the CPF system are self-provision and self-reliance which emphasize that individuals have the primary responsibility for providing for their retirement needs. This relieves the state of the burden of financing pensions, thereby creating room for long-term fiscal sustainability. The CPF operates as a DC pension scheme with individual accounts fully funded by contributions from both employees and employers. Pension contributors and pensioners rely solely on accumulated funds in their CPF accounts. Employees (natives and permanent residents) must contribute to the scheme, but the self-employed may contribute voluntarily. The government however offers financial assistance to vulnerable individuals who are not capable of raising a meaningful pension contribution under the CPF scheme. Thus, a means-tested grant is added to the CPF savings account to enable low-income earners to participate in the CPF Life, a scheme that ensures that retirees receive a stable retirement income and pays a monthly annuity to pensioners (Fong et al, 2010). The CPF serves as a vehicle for savings mobilization for contributors for their retirement needs. The scheme also allows for a range of withdrawals for housing, health care, and tertiary education.

The CPF is effectively supervised and administered by a constituted board established by a statutory authority. The composition of the board ensures that all stakeholders' interests are considered. The CPF account is summarized in Table 4.

Table 4: A summary of the Central Provident Fund (CPF) accounts

Account type	Uses of CPF Savings
Ordinary Account (OA)	For housing, insurance, investment, tertiary education, and topping up retirement accounts of loved ones such as parents and spouses to qualify them for monthly payments.
Special Account (SA)	For old age, contingencies and investment in retirement-related financial products. E.g. fixed deposits, treasury bills, etc.
Medisave Account (MA)	For hospitalization expenses and approved medical insurance.
Retirement Account (RA)	The 55th birthday Retirement Account (fourth account) which is automatically created

Source: Central Provident Fund Board (2019)

The design of the CPF ensures that almost every worker in the labour market is covered. It is mandatory for every worker, public or private, hired or self-employed, who earns S$50 or higher per month to enroll in the CPF pension scheme. An account is opened compulsorily for traders who are not already CPF members before their permits are approved (Loke, 2009). These measures led to high levels of participation in the CPF.

The progressive growth of the CPF membership is due to the technological platforms and management practices adopted. The rise in the usage of electronic platforms for the payment of pension contributions resulted in a pension coverage of 94.1 percent (Asher, 2013). According to the International Social Security Association (2011), the key to the successful operation of the CPF is linked to the use of electronic submission and collection systems. Using the electronic platform has reduced human error associated with pension submissions by 42 percent in 2011 (International Social Security Association, 2011).

Weaknesses: The CPF system risks the possibility of too much capital withdrawal before retirement. In addition, the benefits of the state health care scheme (MediShield) are limited because it excludes people above 92 years. What this means is that these vulnerable old individuals are left to foot their health care bills without any form of insurance. Given the high life expectancy, in 2009 a CPF Life annuity scheme was introduced to address this. Finally, the CPF is also discriminatory against non-residents because it excludes them from participation.

Adequacy: The OECD (2017) proposed an average of 72 percent income replacement ratio (IRR) to ensure a moderate living standard. McGill, Brown, Haley, and Scheiber (2005) also suggested an IRR of at least 70 percent. It is noteworthy that despite the high mandatory saving rate at the early stage of workers' lives, many CPF account holders at the age of 55 years are unable to garner even the minimum retirement sum of S$148,000 (in 2017). According to the World Bank (2019), too much capital withdrawals before retirement are responsible for the retirement liquidity crisis in Singapore. For instance, in March 2017, S$200 billion was withdrawn by about 2 million members from the CPF to fund housing. This had the effect that Singaporeans are rich in housing assets but poor in cash during retirement. To boost retirement income adequacy, Koh (2014) proposed that Singapore's CPF must undergo some reforms. First, by monetizing home equity through reverse mortgages, subletting parts of one's home to earn rental income, and downsizing by moving from large housing units to smaller ones. Second, placing a limit on the CPF withdrawal for housing. Third, raising the CPF allocation rate for older people to increase the full Retirement Sum (RS).

Sustainability: A major challenge facing the Singaporean pension system is an aging population that may hamper sustainability (World Economic Forum, 2017). Singapore's CPF is a DC plan that pays lump sum benefits to members. This raises the question of how the country will deal with this demographic transformation. To address the problem of aging and to ensure sustainability, the country introduced a CPF Life scheme in 2009 which is also known as "Lifelong Income for the Elderly" (CPF Board, 2011). This scheme is a national annuity scheme that provides life-long retirement income security for the aged. The CPF Life is expected to make the pension scheme more sustainable, fair, flexible, and affordable (World Economic Forum, 2017). Also, low-income earners face the possibility of outliving their wealth during retirement with most DC pension plans. To address this problem the government of Singapore has added means-tested grants to the CPF savings account to enable low-income earners to participate in the CPF Life scheme (Fong et al, 2010). The special design of this scheme has helped to ensure fairness, flexibility, affordability, and sustainability in the following ways: First, the scheme permits members to choose their premiums that will correspond to their desired retirement needs. Second, pension payouts are proportional to the quantum of individual contributions and investment returns. Third, members of the scheme have the discretion to choose the age at which payouts should commence once they fall in the eligibility age of 65 years. Fourth, the scheme provides an incentive of a 7 percent rise in payouts for each year deferred from the date eligibility starts. Lastly, CPF Life allows transfer from CPF savings accounts above the minimum threshold into the accounts of next of kin such as parents and non-working spouses, to enable them to qualify for the CPF Life annuity plan (World Economic Forum, 2017).

Affordability: An affordable pension system requires that the system is within the financial capacity of members and the nation without compromising economic and social needs (World Bank, 2008). As a DC pension plan, as well as a national pension scheme, the comprehensive nature of the CPF allows for flexibility and ensures that members contribute according to their financial ability. One example of this flexibility is the introduction of CPF Life in 2009. The scheme automatically enrols members to optimize the gains of risk-pooling and to realize economies of scale. The government's supervisory body, the CPF Board, and the administrator of CPF Life ensure that premiums are kept low. In addition, no limitation is set for CPF Life premiums, and members with lower savings in their retirement account have the option to participate because the government tops up the difference to make such individuals eligible. These provisions make the CPF fair, flexible, and affordable.

Equitability: The government of Singapore has policies enshrined in the CPF aimed at decreasing income inequality and ensuring that the population is not deprived of its share of the benefits of economic growth (Phang, 2001). The CPF aided by the government assumes the responsibility to supplement the retirement account to the tune of S$60,000 (since 2016) to enable low-wage earners to qualify for the CPF Life annuity. In 2016, another complementary non-contributory scheme called the Silver Support Scheme (SSS) was introduced. This SSS provides income supplement only for retired Singaporeans above 65 years whose incomes fall between the bottom 20 to 30 percent. The CPF Board automatically reviews the eligibility for SSS every year.

The CPF has other redistributive features that contribute to the benefit of low-income earners. For example, since 2016, an extra 1 percentage point interest is paid on the first S$30,000 of CPF balances for members aged 55 and above. There is also a provision for an additional 1 percentage point interest on the first S$ 60, 000 of CPF members' account balances. These provisions help to improve the retirement earnings of those with lower account balances in their retirement account (Chan, Khai & Lim, 2016).

Predictability: As a DC pension scheme, the CPF benefits are shared per the total sum contributed by members and interest earnings from investments. Except for cases where contributors are unable to meet the Basic Retirement Sum (BRS) due to low-income levels, the government tops up the difference to meet the BRS which would allow members to enrol in a CPF Life to earn a life annuity.

Robustness: The capacity of a pension scheme to withstand demographic, economic, and political turmoil shows its robustness. The CESifo DICE report (2015) noted that regardless of the funding principles of pension schemes, there is a risk that private pension schemes may not be able to honour their pension obligations due to economic

shocks, changes in demographic structures, and asset price fluctuations. Also, bad investment outcomes due to market turbulence can adversely impact the amount of savings accumulated in individuals' retirement accounts (Chan, Khai & Lim, 2016).

The Singaporean CPF has been resilient to the demographic shock caused by the longevity and investment risks of members. These issues are cautiously addressed in many ways. Firstly, the provision of the CPF Life ensures that a stable retirement income is received and allays the fears of investment risks. Secondly, the CPF contributions are secured because the funds are invested in Special Singapore Government Securities (SSGS), which are bonds issued with an AAA credit rating. Each account is entitled to a minimum of 4 percent but a maximum of 6 percent interest per annum. This rate is higher than rates earned on bank accounts (CPF Retirement Booklet, 2019). For example, in 2019, the interest rate on CPF accounts attracted up to 6 percent per annum as against a bank fixed deposit rate of 0.92 percent per annum for the same year (Arndt, 2020). Because of this attractive rate, CPF account members prefer to leave their funds in the account if no urgent needs arise.

Furthermore, the structure of the housing loan market has paved the way for the CPF contribution rate to be applied as an instrument for macroeconomic stabilization (Phang, 2001). For example, in 1986 and 1999, the CPF was used as an economic recovery tool to address the country's economic crisis during those periods. The government reduced employers' contribution rates to assist people in retaining their jobs even though this meant a shortfall in CPF savings (Asher, 2013).

Labour market impact: Incentives are given to the elderly to continue working to enhance their retirement income. For example, special employment credits of up to 8 percentage points of wages are given to employers who engaged older persons above 55 years old. The introduction of a 1 percentage point additional interest on the first S$ 60, 000 of CPF members' accounts by the government in 2008 is an incentive for individuals to work longer to build up their retirement balances.

Savings mobilization: According to Koh (2014), the compulsory savings by Singaporean workers through the CPF have boosted savings at the national level. This is achieved by channelling members' contributions into various accounts to take care of their various needs such as home acquisition, child education, investment, retirement, and healthcare needs.

Financial market development: CPF members have two options when it comes to investing their pension contributions. Fong (2020) observed that only 16 percent of CPF account holders invest part of their contributions outside the CPF board. The CPF board's investment is the largest single pool of investible funds in Singapore next to foreign reserves. The various investment portfolios by the government are managed by the Government Investment Corporation (Nesadurai, 2006).

4.4 The Pension System of Ghana

The elderly population in Ghana has increased about seven-and-half times from 213,477 in 1960 to 1,643, 381 in 2010. It has been rising at an increasing annual rate that reached a maximum of 4.78% in 2020 (World Data Atlas, 2020). The country's life expectancy increased from 50.03 in 1975 to 64.9 years in 2020 (United Nations Population Prospects, 2020). According to Mba (2010), Ghana has one of the highest proportions of persons aged 60 years and over in sub-Saharan Africa. The rise in the elderly population coupled with the gradual rise in life expectancy has important implications for old age income security and the pensions of retirees.

Like the other countries under consideration in this study, the Ghanaian pension system is also assessed with the aid of the World Bank multi-pillar pension evaluation criteria. Evidence that emerged from these assessments are compared with these countries.

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The need for pension reforms in Ghana

Public outcry about the inadequacies of pensions to maintain moderate living conditions, and the difference between pension schemes raised concerns in Ghana. Also, the Social Security Pension Schemes did not cover the informal sector, which employs over 80 percent of workers (Ghana National Pensions Act, 2008 -Act 766). These concerns led to the current three-tier pension reforms in 2008, which are discussed in the next section.

Ghana's current three-tier pension scheme

Ghana's current pension system consists of three pillars: two mandatory and one voluntary pillar. The Ghana National Pensions Act, 2008 (Act 766) specified that the full retirement age is maintained at 60 years and 55 years for those who work under hazardous conditions such as underground mining, quarry or steelworks, or any other employment that the worker stands the risk to contract industrial diseases (sections 75 & 76 of Act 766). The new system is a hybrid of Defined Benefit and Defined Contribution plans designed to generate better retirement benefits. Table 5 presents a summary of the three-tier pension system.

Table 5: Summary of Ghana's three-tier pension system

Tier	Objective	Form	Target groups/Benefits	Funding
Mandatory Tier-one	Elderly poverty protection and consumption smoothing.	Publicly managed mandatory contributory DB plan (financed on a PAYG basis).	Formal sector workers. (Annuity payment)	11 percent of the employee's monthly basic salary.
Mandatory Tier-Two	Consumption smoothing through lump-sum payment.	Privately managed mandatory occupational DC plan.	Formal sector workers. (Lump-sum payment). No withdrawal until retirement	5 percent of the employee's monthly basic salary
Voluntary/Optional Tier-Three	Consumption smoothing/ asset enhancement	Voluntary savings to occupational or private pension DC plans	Informal and Formal sector (Lump-sum payment). Partial withdrawal is allowed.	i. Informal workers: No limits set. ii. Formal sector workers: Discretional rate of basic salary

Source: Compiled by the author, 2022

It must be noted that for the Tier-One (DB) scheme, Social Security and National Insurance Trust (SSNIT) assumes the mandatory responsibility of providing pensions to workers during their retirement. However, with the Tier-Two (DC) scheme, employers make regular contributions to workers' retirement accounts but are not mandated to provide an annuity to retired employees since the function of this tier is only to top-up pension received from Tier-One. With the Tier-Three scheme, the responsibility for ensuring adequacy lie solely with the recipient of the lump-sum amount. Contributions to the Tier-Three scheme can either be made by individual members or both individuals and employers. This pillar aims to enhance individuals' asset levels toward

retirement. Since the implementation of the new pension reforms, some observations and challenges have been identified, which are discussed in the following sections.

Fund Management: As part of the transitional arrangement for the new reform, a Temporary Pension Fund Account (TPFA) was set up and managed by the Bank of Ghana to receive contributions from the Tier-Two mandatory contributory scheme. This became necessary because the private trustees, pension fund managers, and custodians who were supposed to handle the fund were not yet constituted. As of 2023, the Bank of Ghana is unable to remit the full amount of the Tier-Two funds that were deposited in the TPFA at the start of the reform process to the private fund managers due to government interference. This unnecessary delay had dire consequences on retirement income and the growth of investment portfolios.

Supervision: The continuous existence of other parallel pension schemes in Ghana for some selected public sector workers is a matter of concern, which also contravenes the Act that established the new pension reforms. According to the Ghana Pension Act 2008 (Act 766), within five years of the implementation of the reforms, parallel pension schemes including those of public universities, public research institutions, armed forces, police service, fire service, judges, and judicial service workers will be unified and become part of the new scheme. However, after more than a decade of pension reforms, the unification of parallel pension schemes has not yet occurred due to a lack of political will and the fear of revolt from the security forces.

Coverage: The Global Age Watch index (2015) reports that only seven (7) percent of those over 65 years in Ghana have pensions and that this income is inadequate to maintain a moderate living standard. This situation may be attributed to present retirees never having the opportunity to participate in a pension programme, and the existence of a large informal sector, which is inadequately covered. Coverage of the informal sector remains a major challenge for the Ghanaian pension system. The National Pension Regulatory Authority of Ghana (2018) indicates that an estimated 1.6 million workers contribute to any form of pension in Ghana, and of this number, only 1 percent is from the informal sector. Considering the high percentage of workers in the informal sector, and their level of pension enrolment, this figure is far below expectations and inconsistent with efforts to secure an improved retirement income for workers in the informal sector. This finding aligns with Dorfman (2015), who asserted that insufficient coverage of pension schemes is a challenge in South Saharan Africa.

Another factor militating against pension coverage in the informal sector of Ghana is the perception of the safety of invested funds in private institutions and companies. In recent years, investors in Ghana have suffered many financial improprieties. It is still fresh in the minds of most Ghanaians how people have lost their investments through unregulated, fraudulent, or “Ponzi” investment schemes and insolvent financial institutions. It can be argued that the insecurity of funds, irregular income, and the future of service providers are major disincentives for individuals to participate in private voluntary pension programmes. It also calls for innovative measures to build confidence in the reliability of pension funds invested in private companies.

Adequacy: The practicality of the computation formula of the new pension reforms was tested in 2020 when the first batch of retirees started receiving their benefits. The meagre nature of the lump sum benefits from the mandatory Tier Two led to a public outcry and the rejection of the formula by the Trades Union Congress (TUC) and other labour unions. Pensioners were disgruntled about the benefits they received and called for immediate changes in the computation formula. The September 23, 2020, edition of the Daily Graphic in Ghana published that: “the Trades Union Congress has called on the government to take responsibility for the shortage in the payment of lump sums to pensioners who started retiring under the new Ghana pensions Act, 2008 (Act 766). It was the stance of the labour union that the government topped up the shortage on pensioners’ contribution computed under the new law”.

Another factor that explains the inadequacy of pensions in Ghana is the low patronage of the voluntary pillar due to inadequate education on the scheme. According to Darko (2016), one major challenge faced by the new pension reforms is inadequate information and knowledge by the public on the different components of the scheme. The Ghanaian public sector workers do not clearly understand the components and benefits of the three-tier pension

system due to its technical nature and the requirements of the scheme. This finding is consistent with the results of Dorfman (2015) on pension system adequacy in Sub-Saharan Africa. Dorfman (2015) posits that pensions in the sub-region are inadequate, especially for workers with no supplementary pension provision, who represent the majority of the labour force.

Furthermore, the inadequate pension problem in Ghana is made worse by a strategy adopted by employers to channel workers' remuneration into allowances to reduce their share of pension obligations. This practice lowers the actual amount of pension contribution, which inevitably leads to low pensions. One way to resolve this problem is to encourage employees to negotiate for better-structured salaries. In addition, employees must ensure that employers pay their contributions regularly. However, the reality is that workers cannot easily negotiate for higher salaries because there is an excess labour supply recording 13.14 percent in 2022 (Baffour-Awuah, 2022).

Sustainability: The SSNIT pension scheme undergoes periodic actuarial evaluation to determine the financial sustainability of the scheme. The last available actuarial report on Ghana in 2014 (SSNIT annual report, 2016) indicates that the SSNIT pension scheme is not financially sustainable for the period to 2064. Indeed, predictions of these reports have started manifesting as the rate of change of total pension incomes fell below total pension expenses, and the rates of the differences were -15.65 and -47.98 in 2015 and 2016 respectively (SSNIT annual report, 2016). Active SSNIT membership stood at 1,734,168 as against the total membership of 5,770,128 as of December 2021 (SSNIT, 2021). Also, the latest actuarial review of the SSNIT scheme as of 31 December 2017, concluded that "the SSNIT scheme is not financially sustainable over the period covered by the projections from the report" (SSNIT, 2021). From these facts, it appears that the Tier-One scheme managed by SSNIT is facing a financial challenge. During the same period, benefit payments and administrative costs increased but contribution inflows and investment returns declined. For example, benefits payments outweighed contributions by GH₵531,314,000 and GH₵230,354,000 in 2015 and 2016 respectively (Ibid). Immediate efforts instituted by SSNIT to address these challenges are legislation to prosecute recalcitrant employers who will evade contributions, and measures to maintain a clean pension register to prevent payments to "ghost" or non-existing retirees.

Affordability: Pensions in Ghana are not financed by the government through taxation. Since the 1970s Ghana's macroeconomic and fiscal position has been uncertain. Despite the various economic reform agenda pursued to achieve fiscal stability, it failed to yield the desired transformations. In 2001, Ghana applied and qualified for a Highly Indebted Poor Country Initiative Assistance (debt-relief assistance) from the IMF. Worsening economic indicators in recent years attest to the uncertain performance of the Ghanaian economy. External debt stock has been rising from $US 7.34 billion in 2005 and has jumped to $US 28.4 billion in 2022 (IndexMundi, 2022). The debt-GDP ratio rose from 16.58 in 2008 to 39.22 in 2016. It increased further to 84.6 in 2022 (Bloomberg, 2022). The continuous depreciation of the cedi led to a deteriorating currency value from US$ 1.00: GH¢1.00 in 2008 to $US 1.00: GH¢12.2 in 2022 and continues to worsen (Ibid). The situation is not better from a current account perspective. The current account deficit was -$US0.128 billion in 2021 but worsened to -$US1.094 billion in 2022 (Historical data, 2022). The annual average inflation rates fluctuate and are relatively high. The rates were 17.45, 12.37, and 51.7 in 2016, 2017, and 2022 respectively. Against the present macroeconomic background of Ghana, it could be argued that Ghana does not have the adequate fiscal capacity to implement and sustain a poverty-prevention pension pillar.

Equitability: The absence of a universal pension scheme coupled with low coverage does not promote equity. This indicates that old-age poverty is still predominant in Ghana. Therefore, the government will have to reconsider social pensions without disregarding its fiscal position.

Predictability: A predictable pension scheme specifies how benefits are determined. Benefit calculation under the first pillar of Ghana's pension reform is well spelled out and predictable. An employee's benefit computation is determined by provisions in the Ghana Pension Amendment Act 2014, Act 883. This Act stipulates that those who contribute for the minimum period of 15 years (180 months) are entitled to 37.5 percent pension rights

(average of the three best years' salary) after that, every additional twelve (12) months contribution provides the member an annual accrual rate of 1.125 percentage points up to a maximum of 60 percent.

Robustness: According to Kpessa (2011), except for Tier One, which is state-managed, the private Tiers have no robust mechanisms to protect pension contributions against market volatility. The lump-sum benefits of contributors are not protected against risks and uncertainties that may come from market failures or defaults by service providers. By design, access to private schemes is not restricted, and workers can make their own choices. There are, therefore, inherent risks for contributors.

Labour Market Impact: The direct labour market impacts of the new pension schemes are positive. The introduction of the two additional Tiers created new jobs for citizens. Before the Three-Tier pension reforms, pension schemes were managed only by the state. But with the reforms, Tiers two and three are managed by private firms. According to the NPRA, from February 2015, the country had 25 corporate trustees, 62 pension fund managers, and 16 pension fund custodians. The total fund under the management of the private pensions at the end of 2018 was GH₵ 13.0 billion (USD 2.41 billion). These new schemes have helped to create new jobs and have simultaneously boosted the financial sector of the economy (Attah-Krufi, 2020).

Nonetheless, the financial contributions required from employers discourage employment because it leads to higher costs of labour. To mitigate this cost, some employers have channelled workers' remuneration to allowances to reduce their basic salary which is used for the calculation of pension deductions. These actions deprive workers of the full amount of pension contributions and ultimately lead to lower pensions.

Contributions to growth: Despite the challenges experienced during the implementation of the new pension schemes, pension funds contributed about 4.06 percent to GDP in 2016 (NPRA, 2018). The asset value reached GH₵ 22.2 billion (USD 4.11 billion) in 2018 constituting 6.27 percent of GDP. Of the value, Tiers two and three contributed GH₵13.0 billion (USD 2.41 billion), representing 3.68 percent of GDP (NPRA, 2018). Given the drive to extend pension coverage, the proportion of pension assets to GDP is expected to rise further.

Financial Market Development: The investment portfolio of SSNIT's fund is divided between equities, fixed income, and alternative investments such as investment in properties (residential and non-residential) and loans, of which the latter constituted about 32.34 percent of assets in 2016. Investment Assets under Management (AUM) grew from GH¢3,972.69 million in 2012 to GH¢7,896.61 million in 2016, representing a compounded annual growth of 18.74 percent over the period (SSNIT Annual Report, 2016). However, the retention of contributions of Tier-Two funds, deposited in the Temporary Pension Fund Account in the Bank of Ghana, deprives the financial firms of the opportunity to invest such funds in a diversified manner.

5. Discussion of findings

Evidence gathered from this study indicates that challenges experienced by nations practicing multi-pillar pension systems include low participation rates, inadequate pensions, sustainability threats, inequalities due to the absence of redistributive pillars, and the prevalence of myopia. Myopia refers to labour supply and savings decisions by individuals that postpone savings because individuals regard retirement as far in the future and not important when they are young. Others are inadequate supervision, a lack of confidence in the financial sector, improper fund management, labour market distortions, discrimination in pension types and pensions received by public sector workers, the share of employers' contributions is not affordable, delays in the processing of benefits especially for new retirees, and limited information about the components of the pension system, particularly, the voluntary pillar. To address these challenges, the countries have adopted some mitigation measures which are outlined in Table 6. Lessons learned from this comparison are crucial for pension reforms. The comparative analysis used a criteria-based evaluation framework developed by the World Bank (2005) as a point of departure.

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Table 6: Comparison of the Pension Systems of Singapore, Chile, Mauritius, and Ghana

Indicator	Measures adopted to improve indicator performance			
	Singapore	**Chile**	**Mauritius**	**Ghana**
Participation rate	1. 94.1 percent coverage. 2. It is mandatory for every worker who earns at least S$50 to enrol in the CPF. 3. There exist effective electronic payment systems. 4. Government tops up for those with low CPF Life accounts.	1. 71 percent coverage. 2. A solidarity pillar for the elderly poor is available. 3. There exists a pension subsidy for young workers between 18-25 years.	1. 100 percent coverage. 2. Universal non-contributory cash transfer is available.	1. 10.5 percent coverage. 2. Occasional sensitization programmes.
Adequacy	1. There exists a social assistance or redistributive pillar 2. Extension of retirement age from 62 to 75 years. 3. Inter-generational transfer of income to poorer household members is allowed 4. Special old-age employment credit is granted to employers. 5. Jobs are designed to suit the aged. 6. There exists an incentive for a deferred pension.	1. There exists a redistributive pillar. 2. Extension of retirement age: 60-65 years for men and 55-60 for women. 3. Workers can work beyond the stipulated retirement age. 4. A proposal to adopt a tripartite model that involves contributions from employees, employers, and government.	1. A universal cash transfer exists. 2. Extension of retirement age from 60-65 years for both men and women.	1. Absence of a redistributive pillar 2. Introduction of privately managed Tiers.
Sustainability	1. Introduction of 'CPF Life' scheme	1. Lowering of replacement rate. But this policy compromises adequacy.	1. Increased retirement age from 60 to 65 years.	1. Legislation to prosecute recalcitrant employers who evade contributions.

	2. Increased the scope of pension coverage to a record of 94.1 percent 3. Increased retirement age from 62 to 75 years. 4. Grants are available for employers to redesign jobs for the elderly. 5. There are incentives for a deferred pension. 6. CPF Life is invested in a special long-term security guaranteed by the government.	2. There is no restriction on working beyond the stipulated retirement age.	2. Downward adjustment of computation formula.	2. Measures to maintain a clean pension register.
Equitability	1. Availability of a redistributive pillar. 2. The CPF allows for intergenerational cash transfer to poorer household members. 3. Silver Support Income Supplement Scheme is available for the poor elderly 65 years or older.	1. Availability of a redistributive pillar.	1. Universal basic cash transfer through means testing exists.	1. Absence of a redistributive pillar.
Affordability	1. Premium for CPF Life are kept low 2. No limit is set for the CPF Life premium.	1. Proposal to increase the number of AFPs to reduce the high administrative costs.	1. Adjustment of the computation formula to make the redistributive pillar fiscally affordable.	1. The pension system is not budget finance. 2. Contribution to the voluntary scheme is at the discretion of members.
Predictability	1. CPF benefits are shared per the total sum contributed plus interest earnings.	1. A benefit formula exists for those who opt for a monthly annuity.	1. A clearly defined payment procedures exist.	1. Pension right is spelled out for Tier-One account holders.

Robustness	1. Introduction of a CPF Life scheme in 2009. 2. To mitigate the aging population, citizens can work up to the age of 75 years. 3. Special Singapore Government Securities (SSGS) bonds are issued with an AAA credit rating. 4. The SSGS investment earns a risk-free interest rate of up to 6 percent per annum.	1. There exist multi-fund investment options. 2. In dealing with the aging demographic structure, retirees continue working as long as they want.	1. Increased the retirement age from 60 to 65 years.	1. Retirement age is 60 years.
Minimization of labour market distortions	1. Incentives are available for the elderly to continue working 2. The first S$60,000 for every CPF account holder attracts a 1% additional interest rate. 3. Silver Support Scheme for those who are 65 years and above. 4. There exists a discriminatory “Saver Scheme” for Military personnel.	1. Retirees to continue working as long as they wish. 2. Pension subsidy is granted for workers between 18 to 25 years. 3. There exists a discriminatory, non-contributory tax-financed pension for military personnel.	1. Workers show preferences for public sector jobs due to discriminatory pension types. 2. Retirees can work up to 65 years.	1. Equal access to jobs by both men and women. 2. Retirement age is 60 years for both men and women. 3. There exists a discriminatory tax-financed scheme (CAP 30) for the security forces and some selected public sector workers.

Source: Compiled by the author (2023)

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In addition to the lessons learned from the solutions adopted by these countries, this paper finds that effective supervision is crucial to the realization of the goals of retirement income security. It therefore proposes a framework (See Figure 2) deemed essential for a productive pension system, particularly for developing countries where informal workers are predominant. At the centre of the building blocks is the need for effective monitoring and supervision for a successful multi-pillar pension system outcome.

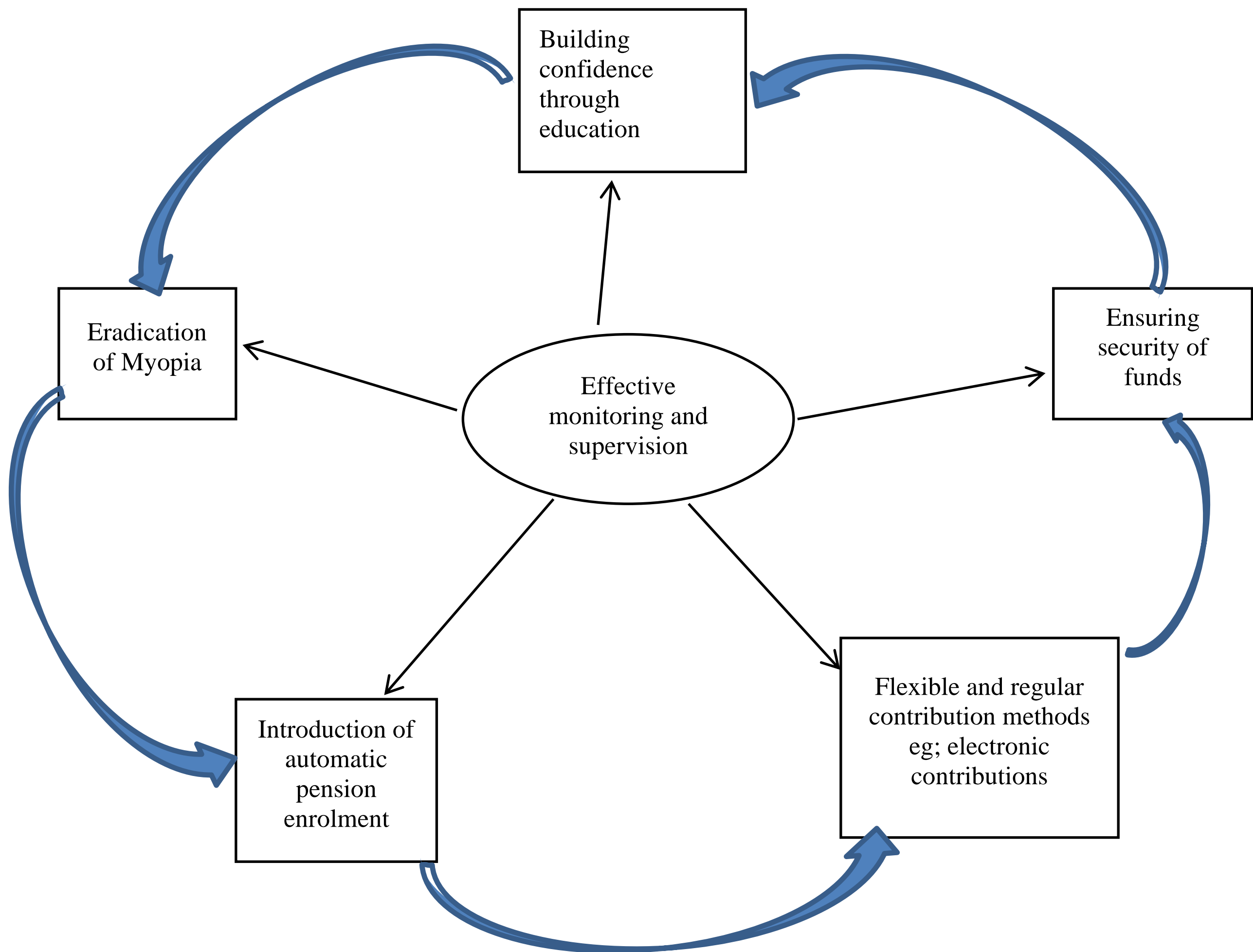

Figure 2: A framework to improve participation in a funded pension scheme

Source: Author (2023)

6. Conclusion and Recommendation

Given the critical roles pensions play in maintaining the living standards of the elderly, periodic evaluation of pension systems is necessary to address economic and demographic changes and to ascertain the resilience of the system based on predetermined factors or criteria. This research analyzed the extent to which the pension systems of Singapore, Chile, Mauritius, and Ghana comply with the World Bank's multi-pillar pension evaluation framework. This approach is supported and regarded as essential for a comprehensive assessment of pension systems. Evidence gathered for this research revealed that the pension systems of Ghana, Chile, and Mauritius

have failed to adequately meet the requirements of the critical factors proposed by the World Bank for pension systems evaluation.

Major contributions of this paper are the lessons learned from the practices of other countries, and the proposition of the model that emphasizes the need for effective monitoring and supervision for successful pension outcomes. It is hoped that lessons learned from this research may serve as an impetus for pension system reforms in these countries and other developing nations.

The study recommends that governments ensure effective supervision, security of funds, and awareness creation in all aspects of the pension system. Also, it is recommended that other proposals indicated in the framework in Figure 2 of this study be adopted to enhance the security of funded schemes. Further research should investigate the extent of affordability and strategies adopted by other developing nations that are implementing universal pension schemes with complete coverage of the elderly.

Conflict of Interest Statement

The author declares no conflict of interest in the conduct of the study.

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