AN ECONOMIC ANALYSIS OF THE GHANAIAN PENSION SYSTEM

BY

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ABSTRACT

The pension industry plays a critical role to ensure old age income security. If the aged are not well protected, it may cause hardship and fiscal pressure and may have negative implications for the labour market, financial markets, savings, and economic growth in general. This research provides an economic analysis of the Ghanaian pension system and evaluates the system in correspondence with the recommendations of the World Bank and other institutions. The research ascertains whether the pension paid to beneficiaries is adequate, explores challenges of pension implementation in Ghana, and examines lessons that can be learned from pension systems of some selected developing countries. The comparative analysis is based on the World Bank multi-pillar pension evaluation model. To ensure that the comparative study is effective, informative, and beneficial the countries selected are Chile, Mauritius, and Singapore. These countries have made strides in their pension system implementations. This research adopts a qualitative research approach and is entrenched in a pragmatist philosophical stance following a thematic method of analysis. Due to the Covid-19 pandemic, telephone interviews were used to draw information from ten pensioners and ten pension fund managers to enhance the research. The main findings of the research are that Ghana's pension system provides inadequate pensions, has a sustainability threat, does not promote equity, and is not affordable to private-sector employers. Furthermore, there are also investment risks, a lack of robustness, weak supervision, and labour market distortions. The pension system is, however, predictable and contributes to economic growth. Some of the recommendations made for Ghana and other developing countries include: that a relatively low pension premium should be set by managers to attract low-income earners to participate; government should institute policies to ensure that business registrations are automatically linked to pension enrolment to improve coverage; and electronic contribution and payment systems should be adopted and encouraged by pension managers to enhance easy access and regular contributions.

Key terms: *Pensions, elderly, economic aspects of pensions, pension systems in developing countries, social security, Ghana pension system, challenges of pension systems, pension system reforms, multi-pillar pension models, pension types.*

OPSOMMING

Die pensioenbedryf speel ’n deurslaggewende rol om ouderdoms-bestaansbeveiliging te verseker. As bejaardes nie behoorlik gedek word nie, kan dit tot swaarkry en fiskale druk lei. Dit kan boonop negatiewe implikasies vir die arbeidsmark, finansiële markte, besparing, en ekonomiese groei oor die algemeen hê. Hierdie navorsing bied ’n ekonomiese ontleding van die Ghanese pensioenstelsel en evalueer die stelsel in ooreenstemming met die aanbevelings van die Wêreldbank en ander instansies. Die navorsing bepaal of die pensioen wat aan begunstigdes betaal word, voldoende is. Ondersoek word ook gedoen na die uitdagings wat pensioen-implementering in Ghana in die gesigstaar, sowel as die lesse wat geleer kan word uit die pensioenstelsels van uitgesoekte ontwikkelende lande. Die vergelykende ontleding is gegrond op die Wêreldbank se multipilaar-evaluasiemodel. Om te verseker dat die vergelykende studie doeltreffend, informatief en voordelig is, is Chile, Mauritius en Singapoer gekies vir die studie. Hierdie lande het goeie vordering gemaak in die implementering van hul pensioenstelsels. Die navorsing volg ’n kwalitatiewe navorsingsbenadering en is veranker in ’n pragmatiese filosofiese standpunt waar ’n tematiese ontledingsmetode gebruik word. Vanweë die Covid-19-pandemie is telefoniese onderhoude gevoer om inligting van tien pensioenarisse en tien pensioenfondsbestuurders te bekom om die navorsing aan te vul. Die hoofbevindinge van hierdie navorsing is dat Ghana se pensioenstelsel ontoereikende pensioene voorsien, ’n volhoubaarheidsrisiko behels, nie gelykheid bevorder nie, en nie bekostigbaar is vir werkgewers in die privaatsektor nie. Daar is boonop ook beleggingsrisiko’s, ’n gebrek aan robuustheid, swak toesighouding, en verwringing van die arbeidsmark. Die pensioenstelsel is egter voorspelbaar en dra tot ekonomiese groei by. Sommige van die aanbevelings wat vir Ghana en ander ontwikkelende lande gemaak is, sluit in: dat bestuurders ’n relatief lae pensioenpremie moet vasstel om lae-inkomste-verdieners te lok om deel te neem; dat regerings beleid moet instel wat verseker dat besigheidsregistrasies outomaties aan pensioenfondslidmaatskap gekoppel word om dekking te verbeter; en dat pensioenfondsbestuurders elektroniese bydrae- en betalingstelsels moet gebruik en aanmoedig om maklike toegang en gereelde bydraes te bevorder.

Sleutelterme: *Pensioene, bejaardes, ekonomiese aspekte van pensioene, pensioenstelsels in ontwikkelende lande, bestaansbeveiliging, Ghanese pensioenstelsel, uitdagings van pensioenstelsels, pensioenstelsel-hervormings, multipilaar-pensioenmodelle, pensioentipes.*

OKUCASHUNIWE

Imboni yezimpesheni idlala indima ebalulekile ekuqinisekiseni ukuvikeleka kweholo labadala. Uma asebekhulile bengavikelekile kahle, kungase kubangele ubunzima nengcindezi yezezimali futhi kungase kube nomthelela omubi emakethe yezabasebenzi, ezimakethe zezimali, ukonga, kanye nokukhula komnotho ngokuvamile. Lolu cwaningo luhlinzeka ngokuhlaziywa kwezomnotho kohlelo lwempesheni yaseGhana futhi luhlola uhlelo ngokuvumelana neziphakamiso zeBhange Lomhlaba nezinye izikhungo. Ucwaningo luqinisekisa ukuthi impesheni ekhokhelwa abahlomulayo yanele yini, luhlola izinselele zokusetshenziswa kwempesheni eGhana, futhi luhlola izifundo ezingafundwa ezinhlelweni zempesheni zamazwe athile asathuthuka akhethiwe. Ukuhlaziya okuqhathanisayo kusekelwe esifanekisweni sokuhlola impesheni yeBhange Lomhlaba elinezinsika eziningi. Ukuze kuqinisekiswe ukuthi isifundo sokuqhathanisa siyasebenza, sinolwazi, futhi sinenzuzo, amazwe akhethiwe yiChile, iMauritius, neSingapore. Lawa mazwe enze intuthuko ekusebenziseni uhlelo lwawo lwempesheni. Lolu cwaningo lwamukela indlela yocwaningo olusezingeni eliphezulu futhi lugxile esimweni sendlela yokubhekana nezinkinga ezigxile ezindleleni ezingokoqobo nezisombululo kulandela indlela egcizelela ukuhlonza, ukuhlaziya nokuhumusha amaphethini encazelo ngaphakathi kwemininingwane esezingeni eliphakeme.
Ngenxa yobhubhane lwe-Covid-19, kusetshenziswe izingxoxo ngocingo ukuthola ulwazi kwabahola impesheni abayishumi kanye nabaphathi bezikhwama zempesheni abayishumi ukuze kuthuthukiswe ucwaningo. Okutholakele okuyinhloko kocwaningo ukuthi uhlelo lwempesheni yaseGhana luhlinzeka ngempesheni enganele, lunobungozi bokusimama, alukhuthazi ukulingana, futhi alukwazi ukuthengeka kubaqashi bezinkampani ezizimele. Ngaphezu kwalokho, kukhona nezingozi zokutshalwa kwezimali, ukuntuleka kokuqina, ukugadwa okubuthakathaka, kanye nokuhlanekezelwa kwezimakethe zezabasebenzi. Uhlelo lwempesheni nokho luyabikezelwa futhi lunomthelela ekukhuleni komnotho. Ezinye zeziphakamiso ezenzelwe iGhana namanye amazwe asathuthuka zihlanganisa: ukuthi inkokhelo yempesheni ephansi uma kuqhathaniswa kufanele ibekwe abaphathi ukuze bahehe abahola kancane ukuba babambe iqhaza; uhulumeni kufanele asungule izinqubomgomo zokuqinisekisa ukuthi ukubhaliswa kwamabhizinisi kuxhumene ngokuzenzakalela nokubhaliswa kwempesheni ukuze kuthuthukiswe ukutholakala kwezimali; kanye nezinhlelo zokukhokha nge-inthanethi kufanele zamukelwe futhi zikhuthazwe ngabaphathi bezimpesheni ukuze kuthuthukiswe ukufinyelela okulula kanye neminikelo evamile.

Amagama asemqoka: *Iizimpesheni, abadala, izici zezomnotho zempesheni, izinhlelo zempesheni, emazweni asathuthuka, ukuphepha kwezenhlalo, uhlelo lwempesheni yaseGhana, izinselela zezinhlelo zempesheni, izinguquko zezinhlelo zempesheni, izifanekiso zempesheni ezinezinsika eziningi, izinhlobo zempesheni.*

DECLARATION

Name: Elias Kwaku Megbetor

Student number: 58539778

Degree: Doctor of Philosophy in Economics

Title of Thesis: AN ECONOMIC ANALYSIS OF THE GHANAIAN PENSION SYSTEM

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution.

Signature:

Date: 30th September, 2021

Candidate: ELIAS KWAKU MEGBETOR

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LIST OF ABBREVIATIONS

AFP: Pension Fund Administrators

APS: Solidarity Pension Payments

APVC: Collective Voluntary Pension Savings

AUM: Asset under Management

BRP: Basic Retirement Pension

BRS: Basic Retirement Sum

CAP 30: Chapter 30 of the 1950 British Colonial Pension Ordinances

CB: Cash Balance

CEO: Chief Executive Officer

CIA: Central Intelligent Agency of United States

CPF: Central Provident Fund

CPI: Consumer Price Index

CSPS: Civil Service Pensions Scheme

DB: Define Benefits

DC: Define Contribution

EEA: Earliest Eligibility Age

FPS: Final Pension Salary

GNI: Gross National Income

GSS: Ghana Statistical Service

HP: Hybrid Plan

ICPM: International Centre for Pension Management

ILC: International Longevity Center

ILO: International Labour Organisation

IMF: International Monetary Fund

INP: Instituto de Normalización Previsional

IOPS: International Organization of Pension Supervisors

ISSA: International Social Security Association

ISSS: International Social Security Standards

JICA: Japan International Cooperation Agency

LCH: Life-Cycle Hypothesis

LEAP: Livelihood Empowerment Against Poverty

MA: Medisave Account

MCPD: Mauritius Commission on Population and Development

MFSC: Mauritius Financial Services Commission

MPG: Minimum Pension Guarantee

NHIS: National Health Insurance Scheme

NPRA: National Pensions Regulatory Authority

NPS: National Pension Scheme

NSF: National Savings Fund

OA: Ordinary Account

OECD: Organisation for Economic Cooperation and Development

PASIS: Assistance Pension

PAYG: Pay-As-You-Go

PBS: Basic Solidarity Pension

PEP: Pension Equity Plans

PISA: Programme for International Student Assessment

PMAS: Maximum Welfare Pension

PPP: Personal Pension Plans

PW: Programmed Withdrawal

RA: Retirement Account

RS: Retirement Sum

SA: Special Account

S-A-Y-E: Save-As-You-Earn

SP: Superintendence of Pension

SSNIT: Social Security and National Insurance Trust

SSGS: Special Singaporean Government Securities

SSS: Silver Support Scheme

TPFA: Temporary Pension Fund Account

TUC: Trades Union Congress

UCT: Unconditional Cash Transfer

UEPP: Urban Employees' Pension Plan

UF: Unidad de Fomento (A unit of account used in Chile)

UNISD: United Nations Institute of Social Development.

WIS: Workfare Income Supplement

TABLE OF CONTENTS

ABSTRACT ……………………………………………………………………………………i
DECLARATION ……………………………………………………………………………iv
ACKNOWLEDGEMENT ……………………………………………………………………v
LIST OF ABBREVIATIONS ………………………………………………………………vi
TABLE OF CONTENTS ……………………………………………………………………ix
LIST OF FIGURES ……………………………………………………………………xviii
LIST OF TABLES ………………………………………………………………………xix
Chapter One ………………………………………………………………………………1
General Introduction ……………………………………………………………………1
1.1 Introduction……………………………………………………………………………1
1.2 Background of the Study ……………………………………………………………1
1.3 Problem Statement ……………………………………………………………………5
1.4 Research Questions ……………………………………………………………………6
1.5 Research Aim and Objectives…………………………………………………………6
1.6 Brief Exposition of Research Methodology …………………………………………7
1.7 Significance of Research ………………………………………………………………8
1.8 Scope of Research ………………………………………………………………………9
1.9 Limitations of the Research ……………………………………………………………9
1.10 Outline of Thesis ……………………………………………………………………10
Chapter Two ………………………………………………………………………………12
A Review of Important Aspects of Pensions …………………………………………12
2.1 Introduction ……………………………………………………………………………12
2.2 Theoretical Frameworks ……………………………………………………………12
2.2.1 Life-Cycle Hypothesis ………………………………………………………………12
2.2.2 Positive Theory of Social Security …………………………………………………18
2.2.3 Principal-Agent Theory ……………………………………………………………24
2.3 Other Economic Aspects of Pension…………………………………………………27
2.3.1 Pension and the Labour Market ……………………………………………………28
2.3.1.1 Final Benefit Design, Work Effort and Job Retention…………………………28
2.3.1.2 Strict Adherence to Actuarial Benefits ……………………………………………29

2.3.1.3 Determining the Retirement Age ……………………..……………………………………31

2.3.1.4 Retirement Age and Unemployment ………………………………………………………31

2.3.2 The Role of Pension in Employment Contracts ………………….……………………….….34

2.3.2.1 Pensions as Altruism ………………………….…………………………………………34

2.3.2.2 Pensions as Deferred Pay ……………………………………………………….…….…34

2.3.2.3 Pensions as Contingent Claims ………………………..…………………………….…..35

2.3.3 Imperfect Consumer Information ……………………………………………………….…36

2.3.4 Risk and Uncertainty ………………………………………………………………………36

2.3.4.1 Macroeconomic shocks ………………………………………………………...............36

2.3.4.2 Demographic shocks …………………………………………………………………..37

2.3.4.3 Other risks ……………………………………..……………………………….……..37

2.3.5 Administrative Cost …………………………………………………………………..……38

2.3.6 Pension and National Savings ………………………………………………………,….…38

2.4 Empirical Review of Some Research Conducted on Pension Systems ……………………..40

2.4.1 Adequacy of a Pension System ……………………………………………………………40

2.4.2 Sustainability of a Pension System ………………………………………………………..........42

2.4.3 Factors Influencing the Sustainability of a Pension System …………………………………43

2.4.3.1 Fiscal and Economic Environment ………………………………………......................43

2.4.3.2 Rising Life Expectancy ……………………………………………………………………..45

2.4.3.3 Fertility Policy ……………………………………………………………………………46

2.4.4 Other Important Challenges for Pension Systems ……………………………………………47

2.5 Conclusion……………………………………………………………………………......48

Chapter Three ………………………………………………………………………………..49

Pension Systems, Models and Evaluation Criteria ……………………………………………………49

3.1 Introduction …………………..……………………………….…………………………..49

3.2 **Types of Pension** ……………………………………………………………………………49

3.2.1 Conception of Pension Design ……………………………………………………………49

3.2.2 Defined Contribution Plan ……………………………………………………………………50

3.2.3 Defined Benefit Plan ……………………………………………………………………………51

3.2.4 Hybrid Plans ………………………………………….……………………………………...54

3.2.4.1 Cash Balance Plan …………………………………………………………………………55

3.2.4.2 Pension Equity Plans 55
3.2.4.3 Floor Offset Plans 56
3.2.4.4 Multi-Employer Plans 56
3.3 Models of Pension Systems 57
3.3.1 The ILO's contributions to the field of pension 57
3.3.2 The ILO principles as point of departure for designing and reforming pension systems........58
3.3.3 The ILO Multi-Pillar Pension Model 60
3.3.3.1 Pillar-Zero (the Pension Floor) 61
3.3.3.2 Pillar-One (Social Insurance Pillar)..62
3.3.3.3 Pillar-Two (Complementary Pillar) 62
3.3.3.4 Pillar-Three (Voluntary Personal Savings Pillar) 62
3.3.4 The World Bank Model 63
3.3.4.1 The need for Pension Reforms 64
3.3.4.2 Functions of Pension Reforms 64
3.3.4.3 Initial conditions 67
3.3.4.4 Setting out core objectives 69
3.3.4.5 The multi-pillar modalities 70
3.3.4.6 Evaluation Criteria 73
3.3.4.7 Scrutiny of the Multi-Pillar Pension System 75
3.3.5 Reasons for the predominance of the World Bank approach 82
3.4 Conclusion 83
Chapter Four 85
Research Methodology 85
4.1 Introduction..85
4.2 Research Approach 85
4.3 Philosophical Foundation 86
4.3.1 Positivism 86
4.3.2 Constructivism 88
4.3.3 Transformative paradigm 89
4.3.4 Pragmatism 90
4.4 Research Design 91

4.5 Sampling Method ……………………………………………………………………..…………..…93
4.6 Sources of Data ……………………………………………………………………….……….93
4.7 Data Collection Methods …………………………………………………………………….93
4.7.1 In-depth Interviews ………………………………………………………………………..94
4.7.1.1 Telephone Interviews ……………………………………………………………………94
4.7.1.2 Research Instrument ……………………………...……………………………………..97
4.7.1.3 Recruitment and Participants' Selection ………………………………………….......98
4.7.1.4 Selection of Pension Fund Managers …………………………………………………..100
4.7.1.5 Selection of Pensioners for Interviews …………………………………………….....101
4.7.2 Document Review …………………………………………………………………………..103
4.8 Data Analysis ……………………………………………………………………………………105
4.8.1 Thematic Analysis …………………………………………………………………………105
4.9 Criteria to ensure trustworthiness of the research ……………………………………………106
4.9.1 Credibility ……………………………………………………………………………………..106
4.9.2 Dependability …………………………………………………………………………………107
4.9.3 Conformability …………………………………………………………………………….….107
4.9.4 Transferability …………………………………………………………………………………108
4.9.5 Authenticity ……………………………………………………………………………………108
4.9.6 Criticism of Lincoln and Guba's framework of quality criteria ………………………...….109
4.10 Conclusion……………………………………………………………………………….....109
Chapter Five ……………………………………………………………………………………..111
A Comparative Analysis of Pension Systems …..……………………………………….....…111
5.1 Background….…………………………………………………………………………………...111
5.2 The Pension System of Chile...…………………………………………………………………113
5.2.1 Introduction ...……………………………………………………………………….………113
5.2.2 The Evolution of the Pension System in Chile …………………………………….....…114
5.2.3 Chile's Pension Reform in 1952 ……………………………………………………………115
5.2.4 Pension Reforms in 1980 ……………………………………………………………...…….116
5.2.5 Challenges Faced by the 1980 Pension Reforms ……………………………………..…….117
5.2.6 Pension reforms in 2008 ……………………………………………………………………118
5.2.7 Pillar-One: Redistributive / Solidarity Pillar ………………………………………….……119

5.2.8 Pillar-Two: Mandatory Contribution Pillar……………………………………………….…….121
5.2.9 Pillar-Three: Voluntary Saving Pillar ………………………………………………..…..124
5.2.9.1 Voluntary Pension Saving ……………………………………………………………...124
5.2.9.2 Collective Voluntary Pension Savings …………………………………………………125
5.2.9.3 Voluntary Savings Accounts…………………………………………….………..……125
5.2.10 Special Pension Institutions Outside the AFPs.……………………………………………127
5.2.11 Some weaknesses of the Chilean pension system …………………………………………127
5.2.12 Coverage of the Pension System ……………………………………………………..…129
5.2.13 Assessment of the 2008 Chilean Pension System …………………………………….....129
5.2.13.1 Sustainability ……………………………………………………………………………130
5.2.13.2 Adequacy ……………………………………………………………………………...130
5.2.12.3 Affordability ……………………………………………………………………………..132
5.2.13.4 Equitability ………………………………………………………………..……..132
5.2.13.5 Predictability ……………………………………………………………………………133
5.2.13.6 Robustness ………………………………………………………………………………134
5.2.13.7 Labor Market Impact ……………………………………………………………………135
5.2.13.8 Contributions to Savings Mobilization and Financial Markets …………………………136
5.2.14 Proposed Reforms ……………………………………………………………………………137
5.2.15 Conclusion……………………………………………………………………………………139
5.3 The Pension System of Mauritius...……………………………………………………....140
5.3.1 Introduction ……………………………………………………………..………….…….140
5.3.2 Dawn of the Mauritius Pension System ………………………………………………….141
5.3.3 1958 Pension Reforms ……………………………………………………………………....142
5.3.4 1976 Pension Reforms ……………………………………………………………………….142
5.3.5 The Multi-pillar pension system in Mauritius………………………………………………143
5.3.5.1 Pillar-Zero: Basic Retirement Pension Scheme …………………………………………..144
5.3.5.2 Pillar-One ………………………………………………………………………………145
5.3.5.3 Pillar-Two: The National Savings Fund …………………………………………………148
5.3.5.4 Pillar-Three: Voluntary Pensions …………………………………………………………148
5.3.6 Coverage ………………………………………………………………………………………150
5.3.7 Challenges of the pension system ………………………………………………………..151

5.3.8 Assessment of the Mauritius Pension System ……………………………………………152
5.3.8.1 Sustainability ……………………………………………………………………...152
5.3.8.2 Adequacy …………………………………………………………………………153
5.3.8.3 Affordability ………………………………………………………………………153
5.3.8.4 Equitability ………………………………………………………………………..154
5.3.8.5 Predictability ……………………………………………………………………. .155
5.3.8.6 Robustness …………………………………………………………………….…..155
5.3.8.7 Labour Market Impact ……………………………………………………………156
5.3.8.8 Contribution to Savings and Financial Market Development ……………………………157
5.3.9 Conclusion……………………………………………………………………….…157
5.4 The Pension System of Singapore…..……………………………………………………159
5.4.1 Introduction……...…………………………………………………………….......159
5.4.2 Evolution of the pension system in Singapore ………………………………………..….160
5.4.3 The Central Provident Fund System …………………………………………………..161
5.4.4 Discussions of major components of the CPF pension system ……………………………..168
5.4.4.1 Housing Needs ……………………………………………………………………168
5.4.4.2 Healthcare Needs …………………………………………………………………169
5.4.5 Coverage ……………………………………………………………………………170
5.4.6 Weaknesses of the Central Provident Fund system …………………………………………171
5.4.7 Other Special Pension Provisions …………………………………………………...171
5.4.8 Assessment of the CPF pension scheme ……………………………………………….172
5.4.8.1. Sustainability ………………………………………………………………….…172
5.4.8.2 Adequacy …………………………………………………………………………174
5.4.8.3 Affordability ………………………………………………………………………176
5.4.8.4 Equitability ……………………………………………………………………..…177
5.4.8.5 Predictability ……………………………………………………………………...179
5.4.8.6 Robustness ……………………………………………………………………….…..180
5.4.8.7 Labour Market Impact …………………………………………………………...….182
5.4.8.8 Savings Mobilization ……………………………………………………………….…...182
5.4.8.9 Financial Market Development ………………………………………………………...183
5.4.9 Conclusion………………………………………………………………………….…184

5.5 Summary of the Main Findings from the Case Studies……………………………………….……186
Chapter Six ……………………………………………………………………………………187
The Pension System of Ghana ……………………………………………………………….187
6.1 Introduction ………………..…………………………………………………………………187
6.2 The Traditional Social Protection System. …………………………………………..…..188
6.3 Pension in the Colonial Era ……………………………………………………………..….189
6.4 National Pension Scheme ………………………………………………………………......189
6.5 Post-Independence Provident Fund ………………………………………………...…190
6.6 Social Security Pension Scheme …………………………………………………..….191
6.7 The Need for Reforms ……………………………………………………………...…...193
6.8 The Current Three -Tier Pension Scheme …………………………………………………193
6.8.1 Tier-One ………………………………………………………………………..…...195
6.8.2 Tier-Two ………………………………………………………………………….…...197
6.8.3 Tier-Three ………………………………………………………………………..……..197
6.9 Challenges Experienced by the Three-Tier Pension Reforms ………………………….…..199
6.9.1 Assets/Fund management………………..……………………………………………......199
6.9.2 Supervision ………………………………………………………………………...…..201
6.9.3 Coverage ………………………………………………………………………..…...205
6.9.4 Education and Awareness ……………………………………………………...…...208
6.10 Assessment of the Pension Reforms …………………………………………...……209
6.10.1 Sustainability ……………………………………………………………………...….209
6.10.2 Adequacy ………………………………………………………………………….….211
6.10.3 Affordability ……………………………………………………………………………215
6.10.4 Equitability …………………………………………………………………………..….216
6.10.5 Predictability ………………………………………………………………………...….217
6.10.6 Robustness …………………………………………………………………………..…..218
6.10.7 Labour Market Impact ……………………………………………………………….….219
6.10.8 Contributions to Savings Mobilization and Financial Market Development ……………...220
6.11 Brief Summary of the Results of Field Interview……….…………..…….……………...220
6.11.1 Introduction..…..…………………………………………………………………………...220
6.11.2 Responses from Pensioners…….………………………………………………….……221

6.11.3 Responses from Pension Fund Managers ……………………………………………….…224
6.12 Comparison of Ghana's Pension System to Chile, Mauritius and Singapore.…………226
6.12.1 Introduction ……………………………………………………………………………..226
6.12.2 Comparison of pension systems of some selected countries………………………...…..226
6.12.2.1 Increasing Participation Rate ………………………………………………...…..229
6.12.2.2 Enhancing pension Adequacy ……………………………………………….…..232
6.12.2.3 Overcoming Sustainability Threats ……………………………………….…..233
6.12.2.4 Ensuring an Equitable Pension System ……………………………………..…...233
6.12.2.5 Affordability of Pension Contributions …………………………………………234
6.12.2.6 Ensuring Predictability …………………………………………………………..235
6.12.2.7 Enhancing robustness ……………………………………………………………236
6.12.2.8 Minimization of labour market distortions ……………………………...…..238
6.12.2.9 Adequate Supervision…………………….…………………………………………240
6.13 Conclusion……………………………………………………………………….…..242
Chapter Seven …………………………………………………………………………………244
Conclusion and Recommendation ……………………………………………………………...244
7.1 Introduction……….………………………………………………………………………...244
7.2 Addressing Research Aim and Objectives ………………………………………….......244
7.2.1 Objective 1: To determine whether Ghana's pension system conforms to the recommendations of the World Bank ………………………………………………………………………………...245
7.2.2 Objective 2: To ascertain the adequacy or not of pension funds to beneficiaries …..………247
7.2.3 Objective 3: To explore the challenges of pension system implementation in Ghana ……...248
7.2.3.1 Other challenges facing pensioners as indicated by interviewees …….………………...251
7.2.4 Objective 4: Lessons learned from pension systems of selected developing countries……..251
7.2.4.1 Improving participation rate ………………………………………………………..252
7.2.4.2 Enhancing pension adequacy ……………………………………………………………..252
7.2.4.3 Overcoming sustainability threats ……………………………………………...…252
7.2.4.4 Ensuring equitable pension system ………………………………………………….253
7.2.4.5 Making pension contributions affordable ……………………………………………...254
7.2.4.6 Ensuring predictability ……………………………………………………………………254
7.2.4.7 Enhancing robustness ……………………………………………………………………..254

7.2.4.8 Minimizing labour market distortions ……………………………………………….……255
7.2.4.9 Contributions to savings mobilization and financial markets development ……………...255
7.2.4.10 Other lessons learned from the case studies ……………………………………………..256
7.3 Further Remarks …………………………………………………………………………....256
7.3.1 Adequate Supervision …………………………………………………………………....257
7.3.2 Policy implications ………………………………………………………………………257
7.4 Recommendations for policy change and further research …………………………………...258
7.4.1 Policy Recommendation …………………………………………………………………258
7.4.2 Recommendations for Further research ……………………………………………….……260
7.5 Final Conclusions…..…………………………………………………………………...…260
Appendices ………………………………………………………………………………….…261
Appendix A: Interview Guide for Pensioners ……………………………………………….…...261
Appendix B: Interview Guide for Pension Fund Managers ……………………………………...262
Appendix C: Pension Fund Managers' Information Sheet for Interviews……………………..…266
Appendix D: Pensioners' Information Sheet for Interviews ………………………………..…269
Appendix E: Gatekeepers Letter to Contact Pension Fund Managers ……………………………274
Appendix F: Gatekeepers Letter to Contact Pensioners ……………………………………………..275
Appendix G: A Table Showing an Audit Trail of the Research Process …………………………276
Appendix H: What Main Lessons Can be Learned from the experiences of Chile, Mauritius, and Singapore?..…...277
Appendix I: Ethical Clearance Certificate Obtained from UNISA Research and Ethics Review Committee………………………………………………………………………….………...286
References ……………………………………………………………………………………...…288

LIST OF FIGURES

Figure 2.1: Life Cycle showing income and consumption patterns ………………………………..13

Figure 2.2: Average earnings of workers age 60-74 in the U.S as a percentage of earnings of workers age 25-59 from 1985-2011……………………………………………………...………20

Figure 3.1: A Diagram Illustrating the ILO's Multi-Pillar Pension ……………………………..….61

Figure 5.1: Pension Contributions, AFP's Responsibilities and Administrative Charges in Chile ………………………………………………………………………………………………..…122

Figure 5.2: Singapore's CPF compared with the World Bank's Multi-Pillar Pension System …...164

LIST OF TABLES

Table 3.1: A summary of the main differences between DB and DC pension plans ………………53
Table 3.2: Summary of the pension systems recommended by Gillion et al (2000) ……………….63
Table 3.3: The World Bank's approach to pension reforms: summary of conceptual framework…68
Table 3.4: Summary of the modalities for achieving World Bank Multi-Pillar pension model……73
Table 3.5: Key differences between the pension recommendations by the World Bank and the ILO..81
Table 4.1: Examples of in-depth interview technique employed in pension-related studies …......102
Table 4.2: Examples of document review research strategy employed in pension-related studies ……………………………………………………………………………………………..104
Table 5.1: Possible choice of funds and risk levels in Chile's Pillar-Two pension contribution ………………………………………………………………………………………………123
Table 5.2: Summary of the Chilean Multi-Pillar pension system ……………………………...126
Table 5.3: A Summary of the Multi-Pillar Pension Schemes in Mauritius ……………….............144
Table 5.4: Summary of CPF Accounts …………………………………………………………163
Table 5.5: Monthly CPF allocation rates for Private Sector Workers……………………………165
Table 5.6: Monthly CPF allocation rates for Public Sector Employees.......................................166
Table 5.7: Monthly contribution rates into the CPF account for private sector employees..…..…167
Table 5.8: Monthly contribution rates into the CPF account for public sector employees …….…168
Table 6.1: Summary of Ghana's Three-Tier pension system …………………………………..…194
Table 6.2: Comparison of the pension systems of Singapore, Chile, Mauritius and Ghana ……...226

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Introduction

The context for the research is provided in this chapter. The chapter is divided into sections outlined as follows: background of the study, problem statement, research questions, aim, objectives, methodology, scope, and delimitation. The remaining sections of the chapter discuss the significance of the research and the outline of the thesis.

1.2 Background of the Study

Retirement is often viewed as a complete withdrawal from the labour market due to old age. Though everyone aspires to live in comfort after retirement, this would only be achieved if good preparations in terms of financial investments are in place. However, many individuals are mostly not economically ready for retirement because of either limited savings or a lack of assets to generate income (Diaw, 2017). This author also points out that the financial preparedness of people towards retirement is often poor and this can often be attributed to the lack of financial literacy (Tuan, Woan-Ying, Nya-Ling, & Ying, 2011; Diaw, 2017). As a result, most countries put in place various social security programmes including pension plans to alleviate the plight of their citizens from this economic quagmire.

Social security is commonly regarded as a basic human right. It is enshrined as such in international legal documents such as the Universal Declaration of Human Rights and the International Covenant on Economic, Social, and Cultural Rights. Compliance with this usually comes in the form of social insurance and/or social assistance programmes. There are countries with traditional social assistance programmes such as school feeding and other in-kind transfers;

however, cash transfers are becoming more popular (World Bank, 2019). In Africa, 40 countries (out of a total of 54) have unconditional cash transfers (UCTs) that represent a doubling since 2010. Despite the remarkable progress made over the past half-decade, most of the poor are not covered by social assistance programmes, especially in lower-income countries (World Bank, 2019). These countries have the lowest coverage levels of poor people in their societies, and the gap is particularly acute in Sub-Saharan Africa and South Asia, where most of the global poor live (World Bank, 2019).

Similarly, various social insurance and assistance schemes rolled out by countries support the principle of the right to receive a cash income in the form of an old-age pension on a regular and predictable basis. This is to support consumption smoothing across the life cycle of a person and to provide insurance against legal retirement at pensionable age. However, globally, nearly half (48 percent) of all people over pensionable age do not receive a pension (ILO, 2014a). Of those with a pension, the ILO (2014a) report further indicates that the pension levels are inadequate for most of them. This implies that a majority of the world's older women and men have no income security, they are often poorly paid, work under precarious conditions, hardly retire, and have to continue working as long as they can. Pension laws and regulations in countries permit only 42 percent of people of working age to receive a pension in the future, and effective coverage may be lower (ILO, 2014a).

In sub-Saharan Africa, only 5 percent of the working-age population is effectively covered by contributory social insurance programmes, while this proportion is about 20 percent in North Africa, Asia, and the Middle East (ILO, 2010). Simultaneously, in high-income countries 75 percent of persons aged 65 or above are receiving some kind of pension, while in low-income

countries less than 20 percent of the elderly receive pension benefits; the median for this group of countries is just over 7 percent (ILO, 2010).

The need for social security and insurance is dictated by uncertainty and longevity risk (Bloom & McKinnon, 2013). In developed countries, life expectancy is high and the age of retirement from active public economic activity is usually 65 years. Countries such as the United Kingdom, Ireland, and Denmark are planning to increase this age to 70 years (OECD, 2015). In developing countries, on the other hand, life expectancy is lower and the age of retirement is usually 60 years. Persons aged 60 years and above are, therefore, often considered the elderly or aged. An aging population was mainly an advanced country phenomenon but is now also experienced by developing countries.

In Ghana, for example, the population of the elderly or those individuals who have reached a statutory minimum pensionable age has increased more than seven-fold since the 1960 population census. The figure rose from 213,477 in 1960 to 1,643,381 in 2010, constituting 6.7 percent of the total population compared to 4.5 percent in 1960. Following this trend, it is projected that Ghana's elderly population will reach 2.5 million by 2025 and 6.3 million by 2050 (Ghana Statistical Service, 2013). Despite this gradual rise, the existing social cash transfer programme in Ghana (a social assistance programme) called Livelihood Empowerment Against Poverty (LEAP) introduced in 2008 to transfer cash to extremely poor households across the country, allocated only 10 percent of its funds to the elderly over 65 years who are eligible for benefits. Beneficiaries across the country in 2016 numbered 90,785 of which about 9,079 were elderly individuals. Worse, the beneficiary households received a paltry USD 11.20 a month depending on the household size of eligible members. Given the predicament of the Ghanaian elderly, there is a need for a pension system or other social assistance programmes that will ensure their income security.

The social security system in Ghana, as is the case in most developing countries, can be traced back to the traditional care and protection system that views the extended family as the main means for providing socio-economic protection. Over time, the quest for economic growth, urbanization, and severe resource constraints confronting traditional systems had worked against the extended family system as an effective source of income security for the aged, the disabled, and the vulnerable in society. The breakdown of the traditional social protection system led to the institutionalization of a pension scheme by the colonial administration (Kumado & Gockel, 2003).

The early pensions programme in Ghana known as Chapter 30 (CAP 30) went through several reforms starting from the 1950s through to the current Three-Tier pension system enacted in 2008. Recognizing the inadequacies, coupled with the agitation by workers' groups for the restoration of public service pensions to the level of the provisions which was still available to some public officers under CAP 30, the Government in July 2004 initiated a major reform of the Pension System in Ghana leading to the enactment of Ghana's Pension Act 2008. In 2009, the implementation of the reformed scheme came into full force. Chief among the transformation was the addition of two private pension pillars to the existing pay-as-you-go (PAYG) state-managed scheme making the current Ghanaian pension system a Three-Tier one. This shift away from a Single-Tier compulsory Defined Benefit scheme became necessary because the previous scheme benefited only formal sector workers. The new scheme is a hybrid of the Defined Benefit (DB) and Defined Contribution (DC) schemes.

This study is set to diagnose the antecedents to the new reform, the implications for retirees, the existing challenges including adequacy and security of funds under both public and private management, coverage, and sustainability of the scheme.

1.3 Problem Statement

Pensions forms an important part of any well-functioning social security system. Since the implementation of the new pension reforms in Ghana in 2008, little empirical evidence has been generated and comprehensive analysis of the system has been lacking. In addition, 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. To date (2021), 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.

This research fills these gaps by providing an economic analysis of the current pension system in Ghana in terms of its economic viability and sustainability, its adaptability for demographic changes, the coverage it provides, the financial sustainability of the system, its equity implications, and affordability of contributions to both employers and employees. The study also seeks to establish the labour market impacts of the pension system, the adequacy of pensions provided to retirees, the predictability of the system, and its contributions to savings mobilization, financial market development, and economic growth. Other aspects that receive attention are the security of pension funds, the effectiveness of fund governance and supervision, the level of workers' awareness of the current system, and challenges confronting the pension system. In addition, interviews are conducted to determine the concerns and expectations of retirees and pension fund managers regarding the current system. To understand the issues better and to make the analysis

more informative, a comparative analysis of the pension systems of three other countries is made. The study used the World Bank Multi-pillar pension evaluation model as a point of departure.

1.4 Research Questions

This research is aimed to answer the following questions:

1. How does the Ghanaian pension system conform to the recommendations of the World Bank?
2. How adequate is the current pension fund to beneficiaries?
3. What are the challenges confronting pension implementation in Ghana?
4. What lessons can be learned from other developing countries' pension systems?

1.5 Research Aim and Objectives

Based on the research questions, the overall aim of the research is:

> To perform an economic analysis of the Ghanaian pension system making use of a comparative study, taking the World Bank multi-pillar pension evaluation model as a point of departure.

To achieve this aim, the following objectives have been developed:

Main Objective

The main objective of the research is to analyze the pension system, practices and challenges in Ghana.

The specific objectives of the study are to:

1. Evaluate Ghana's pension system in conformity with the recommendations of the World Bank.
2. Ascertain the adequacy or not of pension funds to beneficiaries.
3. Explore challenges of pension system implementation in Ghana.
4. Examine lessons that can be learned from the pension systems of selected developing countries.

To achieve these objectives, the next section presents a synopsis of the appropriate methodology required for this study.

1.6 Brief Exposition of Research Methodology

According to Jason and Warren (2020), the research methodology explains how a researcher systematically designs a study to ensure valid and reliable results that address the research aims and objectives. This research adopts the pragmatist's paradigm and method for data collection. According to Kivunja and Kuyini (2017), the philosophical framework of pragmatists emphasizes the 'workability' of research without recourse to whether the questions are wholly qualitative or quantitative. This philosophical framework is the most applicable for this study because it is less restrictive and allows for more flexibility. This approach is discussed in more detail in chapter four.

1.6.1 Research Approach

This study adopts a qualitative research approach. A qualitative approach is warranted when the nature of research questions requires exploration and in-depth examination of the phenomena under investigation by relying on non-numerical data (Lichtman, 2013). According to Leedy and Ormrod (2014), a qualitative research approach is used in describing real-life experiences and giving meaning to them systematically and subjectively. The qualitative research design is considered appropriate for this research because it guides the researcher to solicit information that best describes the gaps, challenges, and practices in the Ghanaian pension system and the need for policy changes and reforms.

1.6.2 Research Design

This research adopts an exploratory research design. According to Malhotra and Dash (2011), an exploratory research design provides insight into the understanding of problems confronting

researchers by utilizing the qualitative approach to research. This research, therefore, conforms to the structures of exploratory design because it describes and explores the pension system in Ghana.

1.6.3 Sources of Data

The data required to accomplish the objectives of this study emerge from both primary and secondary sources. Primary data are data that are collected for the first time to enable the researcher to understand the special research interest better. This research used primary data gathered from interviews to enhance data from secondary sources which include government policy documents, the World Bank and the ILO reports, and relevant reports from other institutions on pensions and social security.

1.6.4 Data Analysis

Qualitative techniques of data analysis are employed in this study. Each research question or objective constitutes a theme upon which analysis and discussion are based. The thematic method is a foundational method for qualitative analysis (Braun & Clarke, 2006). The evaluation framework recommended by the World Bank is used as basis for analysis.

1.7 Significance of Research

This research contributes to knowledge in the field of pension economics in several ways. Firstly, the study identifies the flaws in the current pension system of Ghana. Secondly, it also gives attention to the extent of pension supervision, affordability, robustness, predictability, and labour market impacts of the system. The identification of loopholes in the pension system based on these criteria should enable new policy directions to stakeholders in the pension industry such as the Government and the Social Security and National Insurance Trust (SSNIT). The study also seeks to create awareness of the kind of preparations needed towards retirement and how to improve retirement savings. In addition, useful lessons can be learned from other developing countries,

which stand to improve the performance of the pension industry. The findings from this research do not only add to the existing body of knowledge but also provide an avenue for further research.

1.8 Scope of Research

This research focuses on pension systems and the management of public and private schemes in Ghana. The researcher widely reviewed literature and documents and conducted interviews for pensioners and pension fund managers in Accra. The study adopts a qualitative research technique.

Selected countries are used for comparative studies. To accomplish this, a detailed search is conducted to make the comparison effective, informative, and beneficial. The countries selected are Chile, Mauritius, and Singapore. A critical review and analysis of the experiences of these countries leave many lessons for other developing nations. The rationale for choosing these countries is provided in chapter five of this study.

1.9 Limitations of the Research

A limitation of this research is the focus of investigation on a target population comprising pensioners and fund managers mainly from the formal sector with limited attention given to the informal sector that depended solely on the voluntary contributory scheme. Also, only three countries were used for the comparative studies. Therefore, any further study intending to widen the scope of this research could use additional case studies to enhance the knowledge of pension systems in developing countries.

1.10 Outline of Thesis

This study comprises seven interrelated chapters:

Chapter One introduces the study including the background of the study, problem statement, research questions, aim and objectives, summary of the research methodology and significance of the research. The chapter also provides the scope of the research and the limitations of the research.

Chapter Two provides a comprehensive review of important theories and concepts of pensions such as the Life Cycle Hypothesis, the positive theory of social security, and the Principal-Agent Theory. The review also covers other economic aspects of pensions such as their impact on the labour market, the role of pensions in employment contracts, imperfect consumer information, risk and uncertainty, and pensions and national savings. The chapter concludes with a review of the empirical literature relevant to this study.

Chapter Three focuses on pension systems, models, and evaluation criteria. The focus falls on the concept of pension design, which led to the discussions on the three main types of pensions: defined benefits (DB), defined contribution (DC), and Hybrid Plans (HP) with most of the emphasis on the first two plans. The chapter also looks at models of pension systems recommended by the ILO and the World Bank. A comparison is made of the two models to determine which one fits this study best.

Chapter Four addresses the methodology adopted in this study. It comprises the philosophical underpinning; research methods, strategy and data collection techniques, and analytical method. Lastly, procedures for data gathering and data analysis are discussed.

Chapter Five is devoted to a comparative study of some selected developing countries (Chile, Mauritius and Singapore). The analysis of each country is presented in separate sections and is based on the World Bank's multi-pillar pension evaluation model.

Chapter Six focuses on the Ghanaian pension system. The chapter relies on evidence gathered from both secondary and primary data. The former is obtained by reviewing relevant literature and documents and the latter by conducting interviews. 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 is compared to a selection of countries discussed in chapter five.

Chapter Seven is the concluding chapter of the research and focuses on how the research aim and objectives have been addressed, as well as the contribution of the study to knowledge with respect to policy, empirical studies, practice and methodology. The recommendations of the study for policy consideration and further research also receive attention.

CHAPTER TWO

A REVIEW OF IMPORTANT ASPECTS OF PENSIONS

2.1 Introduction

In this chapter, literature relevant to pension systems is reviewed. The review begins with economic theories and concepts on pensions, some of which include the Life Cycle Hypothesis, the positive theory of social security and the Principal-Agent Theory. The chapter also covers other economic aspects of pensions and end with the review of empirical literature relevant to the study.

2.2 Theoretical Frameworks

This section comprises reviews of relevant economic theories, concepts and principles relating to pensions. The details are discussed next.

2.2.1 Life-Cycle Hypothesis

Amongst economic theories explaining savings for pensions is Modigliani and Brumberg's Life-Cycle Hypothesis (LCH) published in 1954. The theory posits that the accumulation of resources towards future expenditure particularly during retirement is the main motivation behind savings (Modigliani & Jappelli, 1998). For wealth to be hump-shaped (see Figure 2.1), young people should save more and savings should decline at old age when people retire from work (Modigliani, 1986). The theory establishes the relationship between consumption and savings. It emphasizes that income changes with time and savings are a means to allow people to move their income from a period of high earnings to the time in old age when incomes fall.

The Life Cycle Hypothesis explains that the consumption and savings behavior of individuals determine their position on the life cycle. It establishes that young people entering the labour market have relatively low incomes and low savings which even may be negative because they usually purchase a first home and car. In middle-age years, the saving rate rises with income.

Retirement brings a stop to salary or wage income and the individual usually enters a period of dissaving.

The path of consumption expenditure is seen to rise gently, since it is expected that individuals increase consumption as income rises, instead of maintaining a constantly desired consumption pattern. This time profile of consumption and savings is shown in Figure 2.1

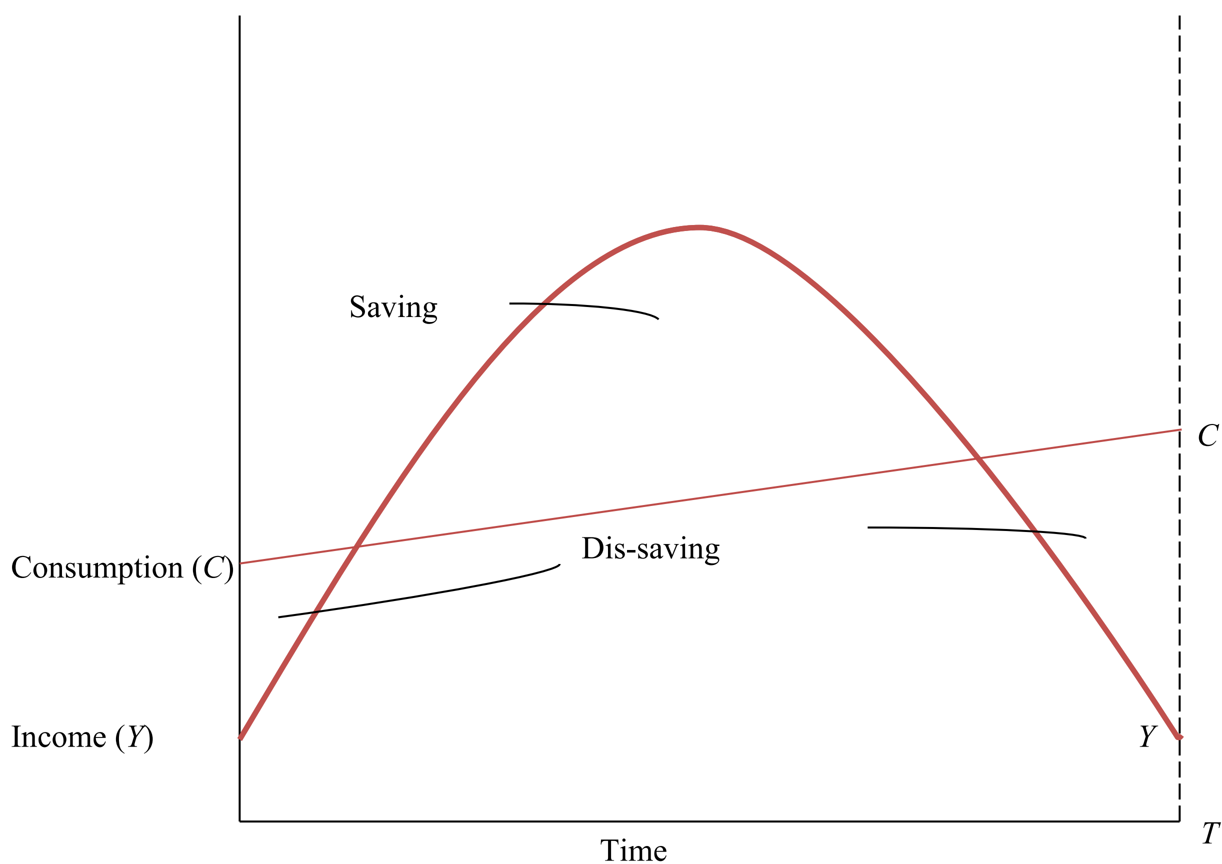

Figure 2.1: Life Cycle showing income and consumption patterns

Source: Froyen (1993)

Figure 2.1 shows that consumption increases slowly over the life cycle. However, income usually rises abruptly in the early years of work, gets to its maximum, and falls particularly during retirement. This trend of consumption and income leads to a negative saving during the early and

later years of work but shows positive savings during the middle period when incomes are high. This results in a hump-shaped income pattern over the life cycle.

A major reason that explains the variation of income over a person's life is retirement. This is because, for most formal sector workers, it is usually statutorily determined that they stop working at a certain age, usually around the ages of 60 to 65. Their incomes from salary and wages are expected to fall or stop altogether during this period. Meanwhile, they usually do not want to experience a sharp fall in their consumption and for that matter standard of living. To maintain this aspiration, individuals must develop the habit to save and accumulate wealth during their working years and dis-save during retirement. How much the consumer saves during his/her early years of work will determine how much he/she will earn during retirement. This theory can assist to explain the inadequacy of pension funds available to pensioners.

The LCH assumes people store and spread wealth over their entire life span. The consumer makes retirement arrangements and modifies consumption at different stages of life towards this goal. It also postulates that people reduce their wealth in old age and are therefore rational and forward planning (Horlacher, 2002). Often, they may not decrease their wealth as some people could prefer to transfer wealth to their children as inheritances. Also, people could be attached to their wealth and may be unwilling to deplete it as indicated by Kotlikoff and Summers (1981). The authors used historical data from the U.S.A and measured the contribution of intergenerational transfers to aggregate capital accumulation. They found that capital formation in the U.S.A is determined by intergenerational transfers, and only a negligible proportion can be attributed to life-cycle savings. Their study, therefore, concluded that the most important reason for savings is the desire to leave an inheritance. The findings from the study of Kotlikoff and Summers (1981), leave unanswered questions because if the main motive for savings is to transfer wealth from generation

to generation, why do persons in the lower-income groups generate wealth? Does it also mean that life-cycle savings towards retirement are unimportant in the case of the average income earner? The study of Kotlikoff and Summers (1981) most probably applies mainly to wealthy individuals.

According to Mankiew (2010), findings from the study of consumption and saving by the elderly are not in line with the life cycle models. In his view, the elderly do not run down on savings or wealth as quickly as the life-cycle model predicts. Mankiew (2010) presents the following reasons why the elderly dis-save to a lesser extent than the model predicts.

He first explained that the elderly are not oblivious to unpredictable expenses. They, therefore, save for such uncertainties. One reason why the elderly may save for this purpose is to avoid longevity risk. As individuals tend to live longer than the average duration of retirement, uncertainties such as a sudden rise in medical bills may arise. The elderly may respond to these uncertainties by saving more to better prepare for those contingencies. However, this precautionary-saving explanation is not entirely convincing because in most cases the elderly can insure against these risks. They can buy annuities from insurance companies to prepare well in advance against uncertainties of life. With the annuity, the recipient receives a stream of income till death. An example is that, in advanced countries, unexpected medical bills for the elderly are taken care of by medical insurance plans provided by the state and by private insurance companies. However, they have to make provision for the necessary funding for the latter.

According to Mankiew (2010), the second motive why the elderly may not dis-save as predicted by the life cycle model is the need to leave an inheritance for their children. Most parents may desire to bequeath their children with property or other forms of wealth that can serve as a springboard for speedy financial development in life. Given this, most elderly may not dis-save as life-cycle theory suggests (Mankiew, 2010).

Behavioural economics suggests many people may lack or postpone the desire to reduce spending now and save less for future expenditure (Cynamon & Fazzari, 2008). According to Life-Cycle models, it is easier for people with high incomes to save than poor individuals. High-income earners are usually better educated and therefore more likely to have the financial knowledge and the incentive to save. Some consumers, especially those with relatively low incomes and with high credit cards or other debts, may have no disposable income left to save. Moreover, consumers may prefer to smoothen leisure instead of consumption by working fewer hours during working age and continue to work part-time during retirement. Fuhrer (1992) and Mulligan (2014) further argued that government means-tested defined benefits (where they exist) for old-age people serve as a disincentive to both work and savings because the social security plan covers those with lower savings.

Another gap identified in the Life Cycle model is its assumption of a continuous flow of income (Palley, 2002). Practically, future earnings are unknown and cannot be guaranteed because individuals may experience a prolonged period of unemployment, illness, or disability. Consequently, it is argued that changes in current income, whether permanent or transitory, may have much more influence on consumption than LCH models would predict (Palley, 2002). The study of Palley (2002) revealed that at the start of the year 2000, the average debt-to-income ratio of households in the U.S.A that had an annual income of less than $50,000 was 298 percent. According to the author, this finding confirms the errors in the assumption of rational planning embedded in the LCH.

Cynamon and Fazzari (2008) had developed a model of consumption and financial behavior using USA household debt data. The results show that the LCH fails to explain the data when subjected to econometric analysis. The assumption that the consumer plans for old age and

regulates his consumption decisions at different stages of life independent of the income received at each age proved contrary (Cynamon & Fazzari; 2008).

In support of his earlier argument, Modigliani (1986) reviewed the work of Kotlikoff and Summers (1981) that asserted that people often would like to bequeath their assets or wealth to their children and therefore would be reluctant to exhaust it. His review pointed out some inaccuracies in their findings. According to Modigliani (1986), the difference emanates from methodological errors such as their treatment of the purchase of durable goods. Modigliani (1986) has shown that when the errors are corrected, the estimates on bequest yield a result of 20 percent, and the remaining 80 percent pointing to life cycle savings. According to him, bequests are therefore less important for the accumulation of wealth. Although Modigliani's conclusion is at variance with what was presented by Kotlikoff and Summers (1981), it emphasizes his earlier position concerning the LCH.

Horioka (2009a) provides a further argument in support of LCH. His study focused on the saving behavior of the aged in Japan and revealed that the retired aged draw on their savings at an advanced age. The author further pointed out that since the year 2000, Japan has experienced a sharp rise in the dis-saving habits of the retired aged. He argued that this increase in dis-saving results from reductions in social security benefits, increases in consumption expenditures, and increases in taxes and social insurance premiums. These findings for Japan are consistent with the predictions of the LCH (Horioka, 2009a).

According to Baranzini (2012), the LCH proposed by Modigliani in the 1950s is a theory in which individuals make clever decisions regarding their expenses at different ages given resource constraints over their life cycles. By making use of assets, credits, and debts, workers can make provision for their retirement by adjusting their spending over different stages regardless of their income levels at each stage. The LCH predicts that national saving is a function of national income

and that aggregate wealth depends on the length of retirement. Decades after the formulation of the LCH, the theory remains an essential part of economists' thinking (Baranzini, 2012). It remained relevant because it serves as a guide to the provision of private and public social security, the effects of the stock market on the economy, the effect of demographic change on national saving, the role of saving in economic growth, and the determinants of national wealth (Baranzini, 2012). The theory also brings to the fore the understanding of the implications and effectiveness of economic policies. Life Cycle Hypothesis offers a direct relationship between monetary policy, interest rates, and consumption. These relate to the fact that changes in interest rates affect the market value of assets and hence consumption (Jappelli, 1995).

2.2.2 Positive Theory of Social Security

The positive theory of social security proposed by Sala-i-Martin (1996) and supported by Tabellini (2000) is also a relevant theory for the analysis of pensions. The theory stipulates that an economy would induce a higher aggregate output if the elderly are replaced with younger workers. Thus, planning and securing the future for older workers would enable them easily exits the labour market. The theory points out that there are positive externalities in the average stock of human capital and that skills devalue with age. More so, the elderly have on average less energy and are deficient in new skills that have adverse effects on productivity. According to Verbon (2012), when the value in skill levels between the young and the old generation is compared and the difference is large enough, then the national output should be higher if the elderly exit the labour market. In this case, retirement is desirable for the elderly, and social security transfers are how such retirement is induced. Verbon (2012) posited that the positive theory is one of the most dominant in explaining the existence of public pension schemes.

The theory explains that pensions are means to induce retirement, thus paying the elderly to relinquish jobs for the young and redistribute income across generations (Bhattacharya, Mulligan & Reed, 2003). According to this theory, a pension programme can achieve this objective because they usually require records of contribution as a prerequisite for participation. Pension programmes encourage the young to work in return for future transfer payments. In this case, income is moved away from the young towards the elderly who are eligible. It is further argued that pensions in general and public pensions, in particular, have the potential to influence work decisions and efforts. By discouraging work among the non-working aged, labour allocation to jobs may improve and this may further reduce distortions in the labour market. Such redistribution may not occur without welfare implications which explains why most pension programmes focus on income redistribution (Mulligan & Sala-i-Martin, 2000).

Sala-i-Martin (1996) testified in his study that this theory is consistent with social security and pension schemes and reforms. It brings the understanding that effective and efficient planning towards the welfare of older workers induces economic growth especially with regards to issues about labour market participation. The impact of this theory (though arguable) is that the elderly are less productive and must exit the labour market for the younger ones that have more energy and skills to work. They, therefore, need financial reparation for this important exit. But the question remains whether the elderly are indeed less productive?

According to Burtless (2013), if increased participation in the labour force by older workers impacts adversely on productivity, the fact is not supported by income statistics on the elderly from the U.S.A. The study revealed that workers between 60 and 74 years earn a higher hourly wage than workers who are between 25 and 59 years (see Figure 2.2 below).

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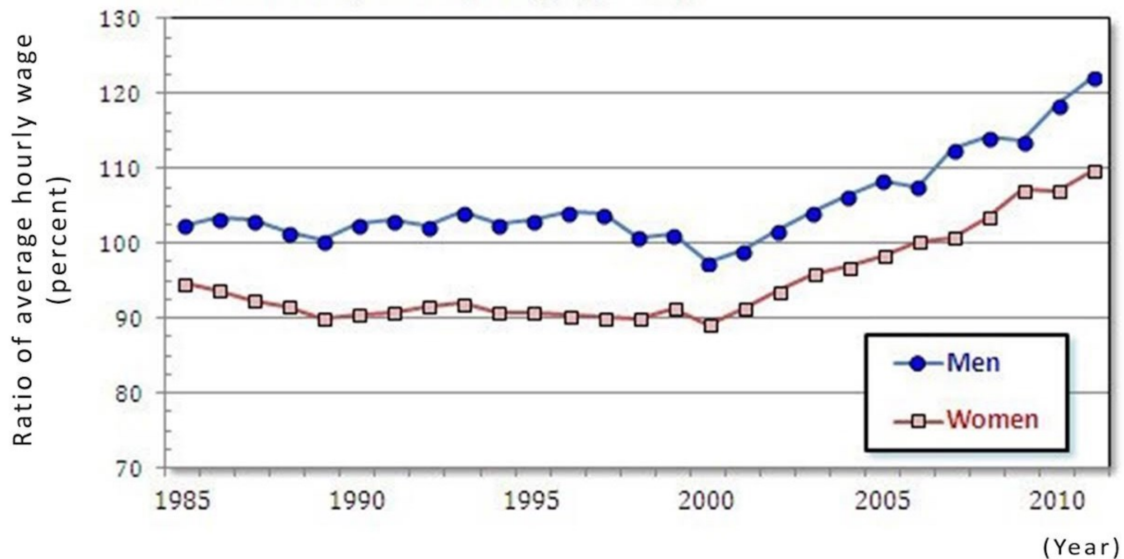

Figure 2.2: Average earnings of workers age 60-74 in the U.S as a percentage of earnings of workers age 25-59 from 1985-2011.

Source: Burtless (2013).

Burtless (2013) posits that since the year 2000, the earning premium enjoyed by older men and women in the U.S.A has increased steadily. Notable gains were observed when trends in annual labour income were measured. The average annual earnings of working men between the ages of 60 and 74 were slightly higher than those between ages 25 and 59. The yearly earnings of women between ages 60 and 74 showed about 11 percent lower than working women between the ages 25 and 59. This gap was much narrower than the beginning of the century when older women earned 28 percent less than their younger counterparts (Burtless, 2013). A possible explanation may be that elderly women joined the labour force when discriminatory payment was still the order of the day.

The idea that older workers will reduce average productivity may be advanced by the perception that the aged face issues such as ill-health, gaps in current knowledge and education, and are more fragile than the young. While these perceptions about the elderly may not be wrong to some extent, they may also not represent the actual description of people who choose to remain employed at older ages (Burtless, 2013). Burtless (2013) indicates that labour force participation rates among

older people vary greatly depending on people's educational level, as was the case with the U.S data. Those with limited education have low employment rates in old age, while people with at least a first degree or higher tend to remain longer in the labor force. He argued further that if the labor force discriminates against workers who are less productive and pushes them out at a younger age, the average output of the older workers who remain at work may compare equally to the average output of the young.

Similarly, Van, Jan, and Stoeldraijer (2010) opined that an effort to establish a direct link between age and productivity is not easy. According to the authors, productivity at the workplace is usually measured collectively and is complex to isolate at the individual level. Since workers are made of individuals of different ages, identifying the relationship between age and productivity is not easily discernible and can only be determined on rare occasions. For instance, in testing physical productivity in sports contests, Van et al (2010) analysed the results from an amateur 10km run in Netherlands using 1998-2008 data. The result indicates that the propensity of speed decline with age depending on the age category. For example, average speed declines from more than 15 km/h for athletes younger than 25years to about 13 km/h for those aged 40 years, and thereafter, average speed remains relatively constant (Van et al, 2010). Physical running only reveals the physical state of an individual and may not necessarily reflect on total productivity.

Related to the above, life expectancy is rising in most parts of the world, and people are generally living longer today than previously. This phenomenon can be attributed to improvement in medical care, reduction in fertility rate, and adoption of healthy lifestyles (Horioka, 2009b). While this is regarded as social success, what are the economic implications? Does the aging population create an economic burden on society? Or can the potentials of older people be harnessed to increase the productivity of the organizations they work for? To answer these

questions, the International Longevity Center (ILC) in 2018, provided more evidence to support the "longevity dividend". According to this institution, higher life expectancy presents greater incentives for individuals to invest more in schooling. They argued that the shorter a parent expects a child to live, the less investment is made towards the child’s education. On the contrary, the longer the life expectancy of a child, the better the readiness to invest more into that child's education since the expected lifelong returns are likely to be higher. One can question whether parents will take life expectancy into account when they are deciding on the education of their children, especially since this is an average estimate that may not apply to all children.

The ILC also explored the relationship between life expectancy and various measures of productivity across 35 OECD countries between the years 1970-2015. They also investigated the impact of life expectancy on increased educational attainment and greater participation in the labour market. Three measures of GDP were used in the computation. The results show that a rise in life expectancy increases all three measures of GDP: output per hour worked, per worker participation, and per capita income (ILC, 2018). This implies a positive relationship between life expectancy and productivity. When investigating the channels through which life expectancy boosts productivity, education was found to be more significant than greater participation in the labour market (employment). The authors noted that this result emanates from a greater return on investment in education. They added that educated people have a longer period to be productive and this tends to encourage greater investment in education to boost productivity. Their analysis suggests that improving health and raising life expectancy must remain a major objective not only for a nation's health and wellbeing but also for the economy’s general growth in output. This is important because, if raising life expectancy could impact productivity positively, this also implies raising more tax revenue for the nation.

The foregoing arguments have been discredited by Skirbekk (2004) in his Literature survey of several studies on age and individual productivity. He observed that one difficulty of accepting some estimates of higher productivity of the elderly in the labour market is that older individuals are normally screened and positively selected. This makes their productivity higher than those leaving the workforce and renders the measurements biased (Skirbekk, 2004).

A related study conducted by Remery, Schippers, and Ekamper (2003) on 1007 Dutch personnel managers and business leaders concerning the age of their workers and productivity revealed an insignificant relationship between the two variables. The authors further noted that in some cases the estimates could be biased due to management's subjective opinion about older workers. They argued that productivity estimates of older workers may be overvalued due to loyalty, seniority, and familiarity reasons. Verhaegen and Salthouse (1997) suggest that output or performance usually rises, reaches its maximum, and declines (inverted U-shape), and the most significant reductions occur after 50 years. Similarly, earnings tend to follow the same pattern; it rises initially in the early years of work, gets to its peak, and falls relatively late in life. Accordingly, Verhaegen and Salthouse (1997) made these observations when they conducted a meta-analysis of 91 different studies on age, cognitive abilities, and productivity. Verhaegen and Salthouse (1997) revealed that productivity reductions at an older age occur only when problem-solving, learning, and speed become important.

Verhaegen and Salthouse (1997) attributed the cause of age-related reduction in productivity to age-specific drops in cognitive abilities. There is a limit to which work experience boosts productivity in the labour market beyond which additional tenure has little effect. An older workforce may face challenges adjusting to modern workplace technologies and new job characteristics (Verhaegen & Salthouse, 1997). Even though senior workers may possess

characteristics such as corporate or institutional memory, know-how, and experiences relevant to the company's success, these are difficult to estimate. Older workers may also have a wider professional network, the capacity to propel the image of the company, give training and guidance, provide tacit knowledge and uphold norms that encourage commitment to work, but such factors are difficult to quantify (Skirbekk, 2004).

The debate on the long-held reduced productivity of the elderly continues as new data keep emerging to prove it otherwise. What financial provision is made as the elderly exit the job market? Are there sustainable financial plans for those who retire from the labour market? If pensions are meant to "buy" the elderly out of the labour market because they are deemed less productive, the question arises whether it is applicable in all cases? Are pension schemes inter alia a bait to buy the aged worker out of the labour market? Are the majority of people covered by pension schemes ready to easily exit their work-life? Subsequent chapters in this study will provide answers to these questions with a focus on Ghana.

2.2.3 Principal-Agent Theory

An agency relationship arises when one party (the principal) contracts another party (the agent) to perform a specified service for the principal. The service typically involves the principal entrusting a degree of decision-making authority to the agent (Jensen, 1998). The principal's task is to ensure that a properly designed and agreed incentive is in place as well as an effective monitoring system so that the contract is executed according to his wishes. This requirement generally involves design and monitoring costs. If the principal can observe and ascertain the exact behavior of the agent, unforeseen problems can be addressed in the contract, but unfortunately, such information is costly to acquire. Agency problems arise because of moral hazards due to information asymmetry.

Moral hazard here refers to the probability that the agent once appointed, will act in his interest contrary to the best interests of the principal and will produce results that may be suboptimal. With the delegation of authority to the agent, the agent may take actions that are not in the principal's best interests but are unknown or difficult to prove by the principal (Hess & Impavido, 2003). The principal-agency theory explains the prevalence of information asymmetry and separation of ownership and control. The theory also assumes that contracting parties have conflicting interests and individuals are self-seeking, unpredictable, and opportunistic (Hess & Impavido, 2003).

In pension funds management, trustees often have considerable discretion in their decision-making and enforcing regulations (Kikete, 2012). Consequently, pension funds are exposed in one way or the other to agency risks (Rocha, Hinz & Gutierrez, 2009). The most immediate and obvious agency risk that pension schemes face is the potential for fraud, misfeasance, malfeasance, or outright theft of assets (Rocha, et al., 2009). In addition, agency problems can arise in other ways. First, there is the risk of improperly divulging secrets and confidential information by members of the governing board who are privileged to possess certain key information through the administration of the pension fund. Second, agency risks can also take more general forms such as the reluctance to put pension funds to optimal use due to corporate misunderstandings by trustees or managers in their discharge of duties (OECD, 2000).

Agency risks are, therefore, prevalent in pension funds management. It is, therefore, essential for employers, employees, and governments to at least understand the principal-agent problem and how they can mitigate it. This knowledge will enable pension fund sponsors to adopt optimal governance tools at the lowest possible administrative cost (Hess & Impavido, 2003). Due to the complex nature of pension funds, specialized knowledge is required, which can be costly and sometimes difficult to acquire. Pension funds are usually heavily regulated, and governments play a

major role in pension scheme governance (Caprio & Levine, 2002). The regulation of the pension industry depends on effective mobilization and prudent distribution of financial resources through a system that ensures transparency, security, stability, sustainability, cost minimization, and sound investment decisions.

Political risks also affect pension systems since they all depend on effective government regulations and policies in different ways (Barr, 2002). More directly, political risk is sometimes evidenced in the use of accumulated pension funds to finance government budgets. While governments may renege on pension promises, their PAYG systems are protected from inflation because the inflated pensions they pay are covered by the inflated income they receive through taxes. Kay (2003) has identified four political risks associated with pension funds namely:

- **Risk of Expropriation:** This refers to the government's action to seize pension funds for its fiscal needs during economic crises. A practical example occurred in 2001 when Argentina was banned from international bond markets (Kay, 2003). In reaction, the government turned to pension funds and accepted a debt swap that deferred the maturities dates at a lower interest rate. Pension fund managers condemned this as they indicated that the government was infringing on the best interests of their clients as they were forced to accept lower overall returns.
- **Governance Risk:** It raises the effectiveness of the government's supervision and regulation of pension funds and the overall functioning of the pension system. This includes enforcing compliance and sanctions against recalcitrant employers and makes provisions for subsidies and guarantees when necessary. The effective functioning of funded pension systems depends on adequate regulations and supervision by institutions that can ensure that

management and investment guidelines are duly followed. The failure to provide such oversight responsibilities may have far-reaching consequences for pension performance.

- **Default Risk:** If government due to fiscal constraints fails to honour its financial obligations, it may impacts negatively on pension systems especially in countries where universal pension schemes exist.
- **Inflation:** The rise in the general price level usually has dire consequences for pension systems. Although inflation rate can be worsened by external shocks, it is usually much more influenced by government's fiscal and monetary policies. There are always the risks that monetary and fiscal policies are more driven by political considerations.

These matters receive further attention when the focus fall on the main pension fund management agencies in Ghana such as the Social Security and National Insurance Trust (SSNIT) and National Pension Regulatory Authority (NPRA) (see sections 6.9.1 and 6.9.2).

2.3 Other Economic Aspects of Pensions

This section briefly focuses on some other economic aspects of pensions. Pension economics refers to the allocation of scarce resources over the lifecycle between an individual's working life and retirement (Blake, 2006). These dimensions range from micro and macro-economic factors, the demographic structure, and pension system design. All these factors have economic implications for the pension structure; whether funded or PAYG. It may be incomprehensive to treat any of these factors in isolation when holistically focusing on pensions. Pension systems are affected by labour market distortions, varying output, unpredictable risks, finance and funding, administrative costs, and distributional issues (Barr & Diamond, 2006). These determinants of pension outcomes are considered in this section.

2.3.1 Pensions and the Labour Market

Pensions could have both wealth and substitution effects. It adds to the real wealth of workers who may decide to consume more leisure later in their careers. Pensions also distort the effective wage rate, and the impact of these distortions might not be insignificant (Ellwood, 1985). Earning of workers which is determined by labour supply[1] is crucial in pension design as it influences funding decisions. For example, in a typical Defined Contribution (DC) plan, high mandatory contribution rates can discourage low-income workers to evade by simply refusing to pay contributions or cause distortion in the labour market by forcing workers to switch to the informal sector. In a Defined Benefit (DB) system, the contributions of workers are subtracted from their income by employers. According to Barr and Diamond (2006), the way pension benefits are designed, and the relationships between benefits and contributions influence the working life of individuals. These issues are discussed in the following sections.

2.3.1.1 Final Benefit Design, Work Effort and Job Retention

Corporations may use pensions as an incentive to retain workers. In many DB schemes, aside from the workers' earning, pensions also depend on work history. Such pension designs sometimes compel workers to stay with a firm until retirement. Although the income of workers influences the final pension, the way final benefits are designed can sometimes create distortions in the labour market. For instance, a young worker in a DB scheme may come to the realization that current earnings may not be used to compute retirement income when benefits are computed based on average earnings of best three years of working life, and may be discouraged to work extra hours to increase earnings. The attitude of the same worker may change towards the end of his career taking into account his retirement income. He might be eager to work extra hours knowing that his pension

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[1] The number of hours workers are willing and able to work in a particular job or industry at a given wage rate.

benefit is tied to his later years of work and such sharp changes may have adverse financial consequences for the pension fund. Bar and Diamond (2006) cited an extreme case experienced by Boston railways where pensions were based on the earnings of workers at the end of their careers but not on the average base pay. This caused older workers to do far more overtime which led to more accidents as fatigue kicked in.

Similarly, managers responsible for promotions in large organizations often use promotion in the later part of careers to increase pension entitlements. The implication of such actions is that it may serves as a disincentive to work for younger employees. The final salary scheme usually associated with DB plans has the effect of retaining middle and older workers. Historically, that was originally one of the purposes of a DB plan but in modern societies, such obstacles to labour mobility however may have negative effects on the job market. According to Bar & Diamond (2006), it is important for a national pension system to determine a worker's benefits on the basis of most or his/her full earning history once the social security administration has the necessary capacity to do so.

2.3.1.2 Strict Adherence to Actuarial Benefits

Holzmann and Hinz (2005) argue that a strictly actuarial relationship between contributions and benefits is optimal. An actuarial relationship minimizes distortions, improves compliance, and encourages deferred retirement. According to Barr and Diamond (2006), actuarial benefits minimise obstacles to labour supply. Such provisions ensure that the assumption of rational utility maximization is complied with. Thus, each contributor derives the highest satisfaction from future consumption by sacrificing current consumption for retirement savings. The authors argued that this situation varies in practice because of market imperfections such as information asymmetry, limited markets, and progressive taxation. Aside from consumption smoothing, pensions have other

objectives such as insurance and redistribution, hence policies such as taxation are necessary to achieve those objectives. In the face of prevailing imperfections, actuarial benefits will generally not minimise labour market distortions. Policies, therefore, have to ensure a balance between labour-market efficiency and other objectives of pension schemes.

Second, actuarial benefits aid compliance with contribution because it assumes perfect information and unconstrained liquidity flow. But in practice, there may be constraints on people's borrowing capacity that might compel them to choose current over future consumption. More so, individuals may be misinformed about the relationship between pension contributions and retirement benefits or they may simply be myopic.

Lastly, actuarial benefits ensure that workers are paid their appropriate pension even when they work beyond the pensionable age (Bar & Diamond; 2006). Pensioners who defer retirement to a later date are offered benefits that are sufficiently larger and usually involve no implicit tax. This incentive is to motivate older workers to stay longer on the job, especially for nations that are experiencing an aging population. For example, in Singapore, those who defer their pension after 65 years and continue to work are given an incentive of a 7 percent rise in pay each year (see section 5.4.8.1).

For the three cases discussed above, the simple argument only holds in the ideal situation (Bar & Diamond, 2006). This does not imply that the relationship between contributions and actuarial benefits in pension designs must be ignored, though. Rather, a good policy design should avoid obvious and major distortions in the relationship between the two variables.

2.3.1.3 Determining the Retirement Age

Features of pension design could have major implications for labour markets, especially when individuals retire. The decision on retirement age in any pension plan usually determines the earliest eligibility age (EEA) and benefits of individuals if they defer retirement. The choice of EEA is guided by certain circumstances such as the type of pension scheme, life expectancy of the people and sometimes financial viability of the scheme. An extension of the retirement age in a pension system with rising life expectancy of workers is usually feasible if the scheme is financially viable. Raising the EEA may not benefit all workers, so the age must be chosen carefully to balance the gains and losses at the margin. For example, raising the EEA from 60 to 65 may:

- Harm workers who want to retire at 60 but do not have enough savings to stop working without a pension benefit. They are therefore compelled to continue working until they reach the new age requirement of 65.
- Benefit workers who want to wait until 65 before retirement but would have retired at 60 on a pension that may be inadequate as the worker grows older.
- Help workers who want a higher pension and more insurance at 65 who have retired at 60 because they can afford to live from their own savings until benefits start at the new EEA.

An optimal EEA strikes a balance between those who benefit and those who suffer. Therefore, decisions on EEA in a pension design should allow some flexibility.

2.3.1.4 Retirement Age and Unemployment

It is often argued that earlier retirement can improve employment. But does a mandatory retirement age really have any positive impact on the chances of the unemployed in the labour market? According to Barr and Diamond (2006), compelling workers to exit the labor market has no sustained benefit for the unemployed. They argued that there is no justification for having a

statutory retirement age. This is because the characteristics of older workers differ greatly in terms of health, interest in work, ability to work and job opportunities. Moreover, employers also vary in their desire to hire older workers. Efficient use of labour is compromised when employment relations between the worker and the employer are not flexible. A mandatory retirement age is therefore neither necessary nor desirable (Barr & Diamond; 2006). Barr and Diamond (2006) also argued that there is no basis to establish that early retirement reduces unemployment. They posit that:

- Firstly, early retirement usually does not move older workers completely out of the workforce, since some of them continue to work while receiving a pension.
- Secondly, encouraging early retirement with the aim of reducing urban unemployment in developing countries will be nullified by migration and availability of job opportunities.
- Thirdly, promoting early retirement with the aim of easing unemployment suggests that jobs are not flexible but are rather fixed in number. There is usually no upper limit for jobs. As economies grow and the structure of the economy changes, specialization increase and additional jobs are created. Also, as technology progresses, it renders some occupations obsolete and this constantly creates demand for new jobs.
- Lastly, a rise in the labour pool due to the retention of older workers exerts downward pressure on wages. This enables employers to identify and select suitable workers, which tends to reduce cost of production and eventually leads to the creation of new jobs.

They concluded that, labor market should not be distorted with the vain hope that engagement of older workers will have a significant impact on unemployment; rather, attention should shift to incentives that encourage long-run economic growth.

A cross-country comparison using a panel data and regression analysis by Böheim (2014) does not show any evidence that increasing the employment of older workers causes fewer jobs for younger workers or vice versa. His key findings are that:

- There is a direct relationship in job employment between young and older workers. Thus, higher employment for older workers coincides with higher employment for younger workers.
- A rise in the retirement age reflects increases in younger workers' wages.
- Worker of all age categories are complements in the labour market rather than substitutes.
- Early retirement of older workers does not lead to an increase in employment for younger workers. It rather distorts the labour market, slows down economic growth, shortens the working life of individuals and reduces the incentives to accumulate wealth.

In contrast, Isiaka and Woli-Jimoh (2017) examined the impact of the statutory retirement age on the youth unemployment rate in Kwara State in Nigeria. They used simple random sampling technique to select a sample size of 390 civil servants from Kwara State Civil Service Commission. They also interviewed a focus group of graduates undergoing the one-year youth service. Using both descriptive and inferential statistics, the results showed that an increase in the statutory retirement age causes a reduction in youth employment and that the level of job creation depends on factors that are related to the mandatory retirement age.

According to Martišková and Sika (2016), since employment is closely linked with the overall success of the economy, as employment increases and more people are absorbed into the job market, more funds are raised to finance pension schemes. Improving employment to absorb more pension contributions in a stable fiscal and macroeconomic environment will go a long way to enhance sustainability of pension funds.

2.3.2 The Role of Pensions in Employment Contracts

Logue (1979) argues that companies provide pension schemes to their workers for three reasons. These are: as a reward for long service (altruism), as deferred pay, and as contingent claims. These three aspects receive more attention in the next sections of this study.

2.3.2.1 Pensions as Altruism

Squires (1912) formulated the altruistic view of pensions when he wrote from a socio-economic perspective that it is improper for any employer to engage the services of individuals' industrial life as long as 10-40 years and leave them as a burden to society. Squires (1912) emphasises the need for employers to financially compensate labour for engaging their services (human capital) in the most energetic periods of their lives. In this regard, management and workers view pensions as gratuities provided by employers who believe that labour like machines depreciates with time and also are improvident, hence must be given financial care in old age (Logue, 1979).

2.3.2.2 Pensions as Deferred Pay

According to Blake (2006), since the 1950s, the focus of pension as a reward for long service and loyalty has shifted and has become a right for workers. Membership of pension schemes now serves as incentives in employment contracts (Wise, 1985). They are designed to maintain a long-term employer-employee relationship. For example, the scheme can have a vesting rule aimed at reducing labour turnover. Workers who exit the market before the vesting date may lose part or all of their entitlement, According to Lazear (1985), the design of pension schemes can improve labour market performance and income at both micro and macro levels that ultimately will raise pension benefits (Lazear, 1985). Lately, most pension funds allow individuals to shift their pension funds

when they change jobs, to prevent the capture of labour and to ensure that the pension funds are not depleted too soon.

2.3.2.3 Pensions as Contingent Claims

Another reason why companies offer pension schemes is to insure workers against occupational hazards (Merton, 1985). A well-designed pension scheme clearly specifies how rewards and risks are shared between employers and employees and also determines how benefits and risks are shared. For example, in a Defined Contribution (DC) plan, a higher reward could mean better investment performance or raising the employer's contribution. On the other hand, compensations in a Defined Benefit (DB) scheme follow a pre-determined benefit formula (Blake, 2006).

Risk-sharing also depends on the type of pension plan. With a DC plan, market or investment risks are usually transferred to the employees. However, the employer bears any risk emerging from market volatility in a DB plan that tends to plunge the scheme into deficits. The firm can pay off such deficits from its future cash flows even though this approach may have adverse consequences. For example, this approach may look unattractive to shareholders who may receive lower dividends in the short-run (Blake, 2006). Another way of risk management is through the firm's policy on hiring and firing. Laying workers off close to their vesting date and replacing them with younger, unvested workers has the effect of reducing pension liabilities (Blake, 2006). This aspect of Blake's (2006) argument is based on expectations that an employee will violate a company's regulation that would get him fired, and lose all entitlements or that the company may follow constructive dismissal practices. Reducing deficits in pension schemes in this manner raises ethical questions. Such actions depend on the legal framework under which a pension system operates.

2.3.3 Imperfect Consumer Information

There is perfect access to information in a perfect competitive market where the consumer is supreme. The situation is however different in the real world where information about output and prices are poorly disseminated or unavailable. Imperfect information about pensions is no exception. Individuals are poorly informed because of uncertainty about the future and the risks it entails. Imperfect information about pensions exists because no one has a full grasp of all future developments. For example, no individual can predict whether he/she will die before retirement or outlive his pension benefits. If this is known, pension decisions and choices would be far easier. Information asymmetry also arises due to ignorance about the operations of the financial markets, choice of pension scheme and mode of benefit determination. Given the high cost of misinformed choices, imperfect information provides enough grounds for regulatory measures to be put in place to protect consumers. Adequate public education is another way of addressing this issue (Barr, 2002; Barr & Diamond, 2006)

2.3.4 Risk and Uncertainty

Pension schemes are all facing certain risks. Members of a scheme usually face three main risks: the risk of death before retirement, the risk of being fired before retirement and the risk of liquidation of the pension fund either by employers or by the government, depending on the type of scheme. The uncertainties and risks faced by pension schemes are briefly discussed in the following sections.

2.3.4.1 Macroeconomic Shocks

Fluctuations in macroeconomic variables such as GDP, inflation, and interest rates affect output levels, prices, and pension outcomes. A shrinking economy caused by recession will affect pensions through its adverse impact on GDP and investment returns (Kay, 2003). Tax finance pension

schemes (DB) run by the government may eventually be worse affected. High inflation rates cause economic instability. Such instability may render pension benefits unpredictable and even erase them. Funded schemes, whether public or private, are more exposed to inflation risk. While public pension schemes face budget constraints in times of inflation, private schemes may face additional risks of market volatility and investment fraud which may decrease the value of pension funds held in equity or even a complete loss of funds. Thus, the risk diversification strategy of funded pensions has limitations when economic fluctuations occur (Kay, 2003).

2.3.4.2 Demographic Shocks

Changes in the demographic structure may affect market prices, quantities of output, consumption patterns, and pensions. A rapidly aging population can pose serious challenges to national pension programmes. Nations such as Japan, Germany, Greece, Italy, and Bulgaria are experiencing an aging population and the elderly may outnumber the youth (Naidu-Ghelani, 2012). These demographic changes will affect pension schemes and consequently pension claims if today's younger working population is to finance the growing aged population, especially in the case of a PAYG pension system. For funded pensions, longevity risk may set in with the possibility of retirees outliving their accumulated pension benefits.

2.3.4.3 Other Risks

Other risks in pension schemes include management and annuity risks. Management risk refers to inadequate supervision, misappropriation of funds, bad investment decisions, and fraud which poorly-informed members with limited knowledge cannot monitor effectively. As mentioned earlier, risk is about exposure to future uncertainties. If a pension fund becomes underfunded due to poor investment outcomes, the sponsoring entity must increase cash contributions in the future to make up for the

shortfall in the case of a DB plan; but, the risk falls on the account holders in a DC plan (DiBartolomeo, 2012).

Another risk is annuity market risk. The value of an annuity in an accumulated pension fund depends on two things: life expectancy and investment returns (Barr & Diamond, 2006). If the population trend shows an increasing life expectancy, fund holders may face longevity risk. This can result in claims or payouts that are higher than what was originally planned. Although DC schemes may be exposed to this risk, DB plans are more exposed because the scheme guarantees lifetime payments to beneficiaries.

2.3.5 Administrative Cost

Preparations towards future consumption that involves accumulation of assets, determination of benefits, and interaction between fund holders and managers generate administrative costs. These costs include record keeping, hiring of staff, management and supervision, and other costs of transaction. The Administrative and investment costs of a pension system are very important because they can potentially erode the value of wealth accrued for retirement and threaten retirement income security (Bikker & Dreu, 2007). Bikker and Dreu (2007) investigated administrative costs of the Dutch pension system and indicated that pension funds that outsource their administration are costlier than those that do not. The study also found that operating costs are lowest for mandatory and pension schemes with a large membership.

2.3.6 Pensions and National Savings

Mandatory pension systems affect national savings, but their impact on future output depends on the funding arrangements in place. Increasing national savings requires some sacrifice of current consumption. This implies raising contribution rates for current workers or lowering the benefits of present pensioners. However, the fund accumulation process depends on the reaction of savers

(workers) and the government budget that may have a negative or positive effect on national savings (Barr & Diamond, 2006). For instance, if shifting contributions from a central fund to individual accounts causes workers to save less, the impact can be adverse on national savings or vice versa (Barr & Diamond, 2006).

To empirically verify whether the accumulation of pension funds stimulates national savings or not, the World Bank Policy Research team led by Murphy and Musalem (2004) used time-series data on pension funds from 43 countries that include OECD members with a total of 400 observations. Using regression equations and panel data techniques, the study finds that the impact of pension funds on savings depends on whether these funds are mandatory or voluntary. More precisely, the evidence suggests a positive relationship between pension funds and national savings when pension contributions are mandatory. The study also found no significant effect of pension funds on national savings when contributions are voluntary. The researchers concluded that even though mandatory contributions increase national savings more than voluntary plans, they are reluctant to suggest any contribution type as a policy instrument to increase national savings. Murphy and Musalem (2004) opined that the contribution to a mandatory pension system must be guided by improving old age income security.

According to Cagan (1965) and Katona (1965), no evidence suggests that individuals covered by private voluntary pension schemes save less than those covered by mandatory schemes. They observed that those individuals may even save more. Cagan (1965) explained that wider pension coverage promotes saving towards retirement, and national savings could rise as a result of this awareness. However, Katona (1965) had a completely different interpretation of the results. He posits that people covered by private pensions saw retirement riskier and saved more to protect themselves.

In conclusion, the evidence, therefore, varies on how pension funds impact national savings. As suggested by Bar and Diamond (2006), the overall outcome will depend on the balance of different responses to savings by different groups of workers. Thus, it is hard to establish a relationship between pension funds and national savings. The priority given to this issue will depend on the country, its existing savings rate, and the desire for accelerated growth.

2.4 Empirical Review of Some Research Conducted on Pension Systems

This section discusses some existing studies on pension adequacy, sustainability of pension systems, factors that influence the sustainability of pension systems and major challenges of pension systems in contemporary times. The details are discussed next.

2.4.1 Adequacy of a Pension System

The provision of adequate pension benefits is one of the areas of concern for the World Bank to ensure income security for retired workers. This objective of the pension system is linked to the definition by Holzmann and Hinz (2005:145) that states that "a pension system should provide sufficient benefits to prevent old-age poverty and also to smooth lifetime consumption for the vast majority of the population".

Studies that aim at measuring the adequacy of pension systems usually employ the replacement rate as an indicator (Chybalski, 2012). According to Chybalski (2012), this indicator is the ratio of the average first pension for new retirees to the average earnings of the active contributors aged 55 and over. Chybalski (2012) made this observation in a study conducted on multi-dimensional measurement of adequacy of pensions in European countries. The replacement rate may be based solely on pension income or on all income available to the pensioners including inheritance.

Borella and Fornero (2009) conducted a study on the types of replacement rates calculated in Europe. Their analysis was based on a broadly defined replacement rate involving pensions and

other incomes of pensioners. First, they assumed that adequacy expressed in the form of replacement rate is insufficient to measure pensioner's wellbeing. They adopted wealth at retirement as a proportion to some base period earnings before retirement as a measure of welfare during retirement. Their definition of economic preparation for retirement is based on an inventory of an individual's economic resources expressed in monetary terms, and it is compared with the optimum consumption path. But according to the World Bank (2005a), this approach to the measurement of pension adequacy is less comprehensive because the researchers disregarded several aspects of broadly defined adequacy such as the level of poverty among pensioners and variance in their income. Also, the measurement is generally one-dimensional as it is based on income only or wealth in hand. To achieve pension adequacy goals, a multi-dimensional approach is proposed by the World Bank (2005a).

Mannaris (2012) conducted a study on pension system adequacy and sustainability in Cyprus by applying the replacement ratio technique to examine the adequacy of the system. It was revealed that the pension system was inadequate. According to the research, the largest adequacy problem was faced by workers without any supplementary pension provision, who also represents the large majority of the labour force.

Dorfman (2015) studied the patterns and challenges of pensions in Sub-Saharan Africa and indicated that pension systems in the sub-region are largely confronted with the challenge of adequacy. Most workers in the sub-region on average have a short contribution history and thus end up with low pension benefits.

Ashaley (2012) in his study on Ghana's pension system asserted that the mandatory pension system provides adequate pensions to beneficiaries, and, therefore, supports the arguments for government intervention in pension systems. His claim on adequacy was however not substantiated

or measured by any existing technique. This matter receives further attention in chapter six of this study.

2.4.2 Sustainability of a Pension System

An important requirement of a pension policy design is to ensure that the system is sustainable over a long period. A pension scheme is sustainable if the contribution rate is sufficient to finance the benefits prescribed in the law adequately without any change or modification to the law. It also ensures that the current structure of a scheme is viable to take care of future financial needs (Kwabla-King, 2017). Rodarte, Ward, Meryam, and Tim (2015) in a paper on the sustainability of pensions in the UK, mentioned that sustainability is about reducing risk and safeguarding the environment in which a pension scheme operates. Rodarte et al (2015) indicate that sustainability is relevant for pension schemes due to their long time horizons.

Researchers and policymakers have discussed different dimensions of the sustainability of pension systems. According to the Department of Family and Social Affairs of Ireland (2007), the sustainability of pensions systems is mostly attributed to financial sustainability that requires that the pension system meets the needs of retirees with the available resources. Grech (2010) argued that while financial sustainability is an essential factor underlying pension reforms, shifting attention to sustainability alone in a pension system is inappropriate since one may be neglecting other important aspects of pension. The concept of sustainability goes beyond financial requirements as pension arrangements must also be sustainable from an economic and social perspective (Department of Family and Social Affairs, 2007). Ramaswamy (2012) posits that the sustainability of pension schemes could be related to economic, financial, and demographic issues.

2.4.3 Factors Influencing the Sustainability of Pension Systems

This section discusses the elements that influence the sustainability of pension systems. The focus falls on the fiscal and economic environments, life expectancy, and fertility policy of nations. The details are discussed next.

2.4.3.1 Fiscal and Economic Environment

Ramaswamy (2012) in his study on sustainability of pension schemes mentioned that a nation's macroeconomic fundamentals have much bearing on its pension system no matter the type of pension design. For example, unusually low interest rates and high inflation rates can erode the gains of a pension scheme leading to funding challenges. Ramaswamy (2012) studied the relationship between the cost of funding pension schemes and the real rate of return in asset markets. The actuarial model showed that the service cost of a pension scheme will be low when the percentage of return on pension assets is high. It is estimated that a 50 percent increase in real returns lowers the service cost of a pension scheme by 15 percent. Funded pension schemes showed strong positive relationship between benefits and contribution rates (Ramaswamy, 2012). This however depends on policies on how pension funds are allowed to invest.

In justifying the economic importance for effective pension sustainability, Allianz Global Investors (2011) conducted a study using a Pension Sustainability Index that cover all EU countries and 17 other countries. It was found that Greece has the least sustainable pensions system, followed by India and China. The low position of Greece related in part to the sovereign debt crisis and the severe macroeconomic problems the country was facing. Nations with a poor fiscal and economic outlook are liable to be confronted with challenges of pensions sustainability. The study also indicates that countries with relatively strong economic fundamentals induces contribution schemes with strong automatic balance mechanisms to enforce financial stability.

In 2015, the OECD studied pension reforms in 34 countries and concluded that improved financial sustainability of pension could be achieved through:

- Reducing net pension benefits by adjusting the benefit formula.
- Increasing contribution rates in DB schemes.
- Increasing taxes on pension income
- Increasing retirement age in the face of rising life expectancy.
- Limiting access to early retirement.
- Enhancing administrative efficiency
- Provision of financial incentives to improve worker retention.

Jackson, Howe and Nakashima (2010) measured fiscal sustainability and pension income adequacy for some selected countries in Europe and observed that the Netherlands was the top performing country in terms of adequacy, but almost at the bottom with regards to fiscal sustainability. Similar situation was also observed in the UK. They inferred that even though a pensions system could be adequate, its fiscal sustainability is not guaranteed. However, the fiscal sustainability argument may differ among nations depending on the kind of pension systems adopted. PAYG systems for instance may be worse affected in an era of macroeconomic fluctuations and demographic changes compared with fully funded schemes.

Generally, there is limited empirical research on the sustainability of pensions systems in Africa, specifically Ghana. Nevertheless, a study conducted by Kwabla-King (2017) on the solvency and sustainability of the SSNIT pension scheme in Ghana unveiled that the current rate of contributions at the current level of coverage is not sufficient to sustain the payments of benefits into the near future.

2.4.3.2 Rising Life Expectancy

Ageing population directly affects pension finance if the scheme is not fully funded. This means a fewer workers are to fund pensions for an increasing number of elderly individuals (OECD, 2015). To investigate this general claim, the European Actuarial Consultative Group in 2012 focused their research on sustainability of pension systems in Europe with special attention on the impact of demographic ageing (longevity) on the systems. According to the group, most countries in the European Union (EU) are experiencing serious challenges due to ageing populations. They proposed an increase in retirement age to address financial sustainability of pensions systems.

In their report on the assessment of modern and sustainable pension systems in Ireland, the Department of Family and Social Affairs (2007) suggests that the changing demograghic profile poses a threat to the long-term sustainability of a pension system especially for a PAYG system. To manage such challenges requires timely intervention and implementation of appropriate policy. The study mentioned specifically that it is necessary to incresase the savings of the national treasury or private savings, reduce operational costs, raise the retirement age, increase the share of the working population and improve the productive capacity of the nation. It was further argued that the projected funding gap could be bridged and the present levels of pensions well maintained if government spendings fall or taxes are raised.

The Department of Family and Social Affairs (2007) also mentioned on the one hand that demographic ageing is a social success while on the other hand creates economic challenges. This social success has cost implications that the workforce will have to bear in a PAYG system. There is also a need to redistribute resouces to foster intergenerational equity. Ways to achieve this success may be through tax reforms, formal execution of welfare programmes and the sale of assets of pensioners to members of the current workforce. There must be a balance in dealing with the

economic costs of demographic ageing and the social cost of appropriate and adequate pension provisions.

The Department of Family and Social Affairs (2007) further demonstrates that timelines are important and crucial to ensure the sustainability of pension policies. They indicate that securing a long-term sustainability of a pension system requires the necessary proactive measures before ageing become a major problem. In other words, issues pertaining to the sustenance of pension systems require a quick response before it escalates. They opine that countries should take advantage when there are strong fiscal and demographic indications of challenges coming to ensure that the nation and public finance are in a better position to handle future spending pressures.

A study by Agneta (2010) in Sweden, supports the view that PAYG systems experience the challenge of sustainability due to ageing populations which leads to an increase in old age dependency ratio. This confirms that ensuring demographic sustainability of pension systems is essential. The changing demographic structure is therefore related to the long-term economic sustainability of pension schemes.

2.4.3.3 Fertility Policy

A nation's fertility rate and policy may indirectly impact on pension sustainability through a changing demographic structure. This was highlighted in a study by Huan, Jianyuan and Qi (2018) in China where the authoritarian regime specifies the maximum number of children a family may have. These authors investigated the role of the fertility policy and late retirement to financial sustainability of the Urban Employees' Pension Plan (UEPP). With a fertility rate of 1.50 as a baseline under the one-couple-one-child policy, and a retirement age at 62 years, the researchers found that the population of insured retiree group would exceed the insured employee group by 2042 and will reach its peak (389.34 million) by 2050. In addition, it was revealed that the old-age

dependency ratio would rise from 0.45 in 2019 to 1.67 in 2070. This phenomenon places an additional burden on pension contributors. The study further projects that by 2070; the accumulated pension deficits would reach CNY 1694.89 trillion. To mitigate this looming demographic risk, a two-child policy was introduced in 2013 and a three-child policy announced in 2021with one of the aims to raise the employee group in future. It will have to be seen whether the new policies will relieve the pressures of the pension system.

2.4.4 Other Important Challenges for Pension Systems

Another important challenge of pension systems is insufficient coverage provided for the working population. Dorfman (2015) studied the patterns of pension challenges in Sub Saharan Africa and concluded that insufficient coverage is one of the biggest challenges. Pension schemes in Sub-Saharan Africa struggle to deliver meaningful old-age income protection to the population. The pension systems often provide little coverage to the informal sector, and payroll tax-financed pensions remain largely irrelevant to most people in the region. The key reason for the poor coverage of pension schemes is the fact that most workers are employed in the informal or the agriculture sector with low and irregular income. Contributory schemes which are dominant in the sub-region are designed for wage-based workers who are mainly employed in the formal sector.

Dorfman (2015) also identifies the fragmentation between civil service and national pension schemes as a challenge. Only about one-fifth of the countries have integrated their civil service and national pension schemes. Substantial barriers exist for workers moving between the public and private sectors, including the portability of pension rights. Amartey-Vondee (2015) also observed that the Ghanaian pension system is faced with challenges such as limited coverage, inadequate attention to the informal sector, compliance issues and inadequate public education on how the pension system operates.

2.5 Conclusion

This chapter reviewed relevant literature on a wide range of issues regarding pension and retirement income security. Theories and concepts relevant to pension design were discussed. The Life-Cycle Hypothesis received attention and empirical arguments both in support and against the theory were highlighted. Other theories analysed were the Positive Theory of Social Security and the Principal-Agent Theory. The chapter further focused on the economics of pension systems and design. Issues discussed included pensions and the labour market, the role of pensions in employment contracts, pensions and national savings and pensions and labour supply. Finally, several empirical works on pension adequacy and sustainability were reviewed. Other important challenges that confronts pension systems point to pension affordability, data gaps, low coverage of the private sector, inefficient labour market and poor regulations and supervisions.

CHAPTER THREE

PENSION SYSTEMS, MODELS AND EVALUATION CRITERIA

3.1 Introduction

This chapter discusses types of pension systems and design. The chapter focuses mainly on Defined Benefits (DB), Defined Contribution (DC), and Hybrid Plans (HP). However, DB and DC plans receive the most attention. The chapter also dwells on models of pensions systems promoted by the ILO and the World Bank. A comparison is made of the two models to determine the advantages of each. Lastly, the chapter examines recommendations made by these institutions and the application of the recommendations to pension reforms.

3.2 Types of Pension

This section discusses mainly the concept of pension design, defined contribution, defined benefits, and the hybrid pension plans.

3.2.1 Conception of Pension Design

Provision of old age security can be viewed in two ways: either by storing current production for future use or exchange current production when younger for a claim on future production when older (Barr & Diamond, 2006). The former approach may be insufficient to meet the demands of old age because it does not address uncertainties (such as longevity risks, market volatility, and economic fluctuations); it is expensive and also may not cover certain human services sufficiently such as medical care where prices usually increase above the Consumer Price Index (CPI). Bar and Diamond (2006) explained that to sacrifice current consumption when younger for future claims at old age can be achieved in two broad ways: first, by saving part of one's income to accumulate wealth (assets) when younger, and exchange this for goods and services produced after retirement. Second, there could be an arrangement or promise from the employer, government, or children that

the worker's consumption needs would be met on retirement. These two types of claims are akin to the two main ways pensions are organised. Funded schemes also known as DC schemes are based on accumulations of financial assets and DB schemes also known as PAYG schemes are based on financial commitments usually from the government (Barr & Diamond; 2006).

Pension types express the relationship between contributions and benefits. The World Bank (2005b) classified pension programmes into three broad types: DC, DB, and HP, the latter is the combination of the DB and DC systems. These three categories are usually distinguished by the law under which they are established.

3.2.2 Defined Contribution Plan

The DC pension plan is regarded as a simpler retirement arrangement where usually both the employer and the employee make regular contributions into the employee's retirement account. The contributions into the employee's account are typically a fixed proportion of the worker's monthly salary. Nonetheless, the contribution arrangements can vary over the worker's career (Krishnan & Cumbie, 2016). In principle, although funds can be invested in any security market, most plans restrict investment preferences to bonds, stock, and money-market, and sometimes, workers have the option to make their own investment choices. Under this plan, investment risks and economic shocks are borne by employees. While investment incomes are tax-exempt, contributions into the pension account are tax-deductible (Krishnan & Cumbie, 2016). Investment abroad is either not allowed or often limited to a certain percentage of the fund.

At retirement, the employee usually has an option to receive a lump sum amount or an annuity, or a combination of both depending on the arrangement. The magnitude of the accumulated amount is determined by the total contribution and investment outcomes (Krishnan & Cumbie, 2016). In the case where the employee's savings is relatively low or he/she has a short contribution history,

chances are that he/she could outlive her savings. If investment performance goes bad due to market volatility, it will negatively affect the retirement account leading to a low pension. This may mean the employee must stay longer on the job to raise her retirement savings (Friedberg & Turner, 2010; Turner, 2010). Generally, life expectancy is rising which implies that the retiree will depend on pension for a longer period and may run out of funds (Bloom & Mckinnon, 2013). The valuation of a DC pension scheme is determined by the value of assets held in the retirement savings account (Krishnan & Cumbie, 2016).

3.2.3 Defined Benefit Plan

Contrary to the concept of a DC plan which focuses attention on the value of assets in the accumulated savings account, a DB plan focuses on the stream of income workers will receive upon retirement (Krishnan & Cumbie, 2016). Contributions to a DB plan are usually made by employers and employees at a predetermined rate but the final benefits that accrue to contributors upon retirement are not solely dependent on the contributions. Employees usually are not involved in the decision of the amount to be deducted into a DB retirement plan (Turner, 2010).

The determination of final benefits under a typical DB plan is based on a predetermined formula that takes into consideration years of service and wage history. Funds from this scheme are insured by the firms and when employees become fully vested, their claims are converted to nominal life annuities. It is nominal because the managers are contractually required to pay the employee a fixed amount at any given time during retirement. To mitigate the impact of inflation on final benefits, DB plans are supposed to be indexed against price fluctuations.

The firms rather than employees bear longevity and investment risks since retirees receive life annuities no matter the performance of the market, and they, therefore, cannot outlive their savings (Friedberg & Turner, 2010; Turner, 2010). The main risk the employee faces is early termination of

appointment or dismissal. If the employee is fired before his or her vested date, she may not be eligible for a pension or may receive reduced benefits. Additionally, the employee is at risk when the pension system becomes insolvent and cannot deliver the payments promised (Friedberg & Turner, 2010; Turner, 2010).

Comparing DB and DC pensions, Krishnan and Cumbie (2016) noted certain important characteristics of the two systems. According to the authors, DB plans provide pensioners with a stable retirement income at a given replacement rate but may face annuity risks whilst DC plans are preferred when inflation uncertainty exists because nominal asset values will increase but beneficiaries may outlive their savings if they live long. Subsequently, they proposed a hybrid of the two systems for an optimal outcome. Ezra (2009) posits that the results of DC schemes are not as predictable as DB schemes, and administrative costs may not be as low as expected. In DC schemes, costs of record-keeping, investment management, portability of account among others may be higher than for DB plans. To affirm this assertion, Munnell, Golub-Sass, Haverstick, Soto, and Wiles (2008) indicate that it is easier for governments to manage DB plans which are mostly free from regulatory costs than DC plans. A summary of the main differences between DB and DC pension plans are represented in Table 3.1 below.

Table 3.1: The main differences between DB and DC pension plans

	DB plan	DC plan
Philosophy	Offer members with lifetime annuities.	Help workers to accumulate savings towards retirement.
Participation	Automatic	Employee choice or automatic
Contributions	i. Typically, workers and employers contribute certain specified percentages of the worker's basic salary. ii. Pension funds are invested and used to pay the member's lifetime pensions. iii. Employer contributions may vary	i. Typically, individuals and employers contribute certain specified percentages of the individual's salary. ii. Contributions are deposited in a personal account set up in the individual's name. Retirement benefits depend on the value of individual account. iii. Employer contributions are fixed
Investment Decisions and Risk	i. Usually, fund management boards are responsible for all investments in the best interest of members under strict guidelines. ii. Employer takes financial risk and faces solvency risks. iii. Employers bear longevity risk.	i. Individuals take investment decisions which are usually based on a range of available investment options. ii. Member takes financial risk iii. Individual contributors bear longevity risk.
Income at retirement	i. Pension income is based on basic earnings and working history. ii. Early leavers suffer a loss. The longer the work history the better the pension income since benefits are largely linked to the vesting period rather than earnings. iii. Benefits do not depend on investment outcome but are fixed in advance. Pension income cannot be terminated once it commences.	i. The money in the individual's account is used to buy a life annuity that earns the individual a monthly income. ii. No loss is suffered by early leavers because their invested account balance remains intact within the scheme. Sometimes they may choose to receive the funds when they resign and may spend it, depending on legislation, which may have negative implications on their pensions when they retire. iii. The size and duration of pension

		income depend on factors such as total contributions, investment returns, and interest rates. One may outlive the fund when he/she lives longer than expected but this will depend on the annuity chosen.
Ancillary Benefits	Many DB plans, offer additional benefits such as: i. inflation protection ii. early retirement benefits. iii. survivor benefits iv. disability benefits	At retirement, individuals may convert their account balance to a lifetime annuity which may be indexed against inflation. However, the cost of provision of income stream may reduce the amount available to beneficiaries.
Access to fund	Fund can be accessed only upon (early or actual) retirement or when a member is incapacitated.	Individuals can have access to their account before retirement.
Termination of scheme	A dire consequence for the members if the scheme is underfunded.	No such consequence since the scheme is funded on individual account.

Source: Zurich (n.d).

Notwithstanding these differences, it is difficult to determine beforehand whether someone would be better or worse off under a DB or DC plan. A good quality DC plan could give a much better outcome than a poor quality DB plan, but a combination of both plans could possibly ensure a superior outcome (Krishnan & Cumbie, 2016).

3.2.4 Hybrid Plans

The development of Hybrid Plans (HP) is to filter the best aspects of both DB and DC plans to the benefit of employees as well as employers. Turner (2010) identified four main types of hybrid plans in the United States, they are cash balance plans, pension equity plans, floor offset plans, and multi-employer plans. The details are discussed in the following sections.

3.2.4.1 Cash Balance Plan

According to Turner (2010), the Cash Balance (CB) plan is the most popular of the HP that was introduced in the U.S but also became widespread in Japan, the U.K., and other countries. In the American model, members of CB plans hold "notional accounts" that are kept in common trust funds that increase with annual contributions plus interest on investment. Beneficiaries receive a lump sum amount upon retirement or at the termination of the plan or if a worker changes employers. In addition, pension benefits in CB plan typically accumulate much more evenly over time compared with the traditional DB benefits (Broadbent, Palumbo & Woodman, 2006). However, the plans are regulated by the government and insured as DB plans (Turner, 2010).

3.2.4.2 Pension Equity Plans

Pension Equity Plans (PEPs) are schemes where a worker accrues a percentage of his final average annual salary. The agreed percentage may be constant or reviewed upwards during the worker's work-life depending on the legal instruments that set up the fund (Turner, 2010). Upon retirement, the total percentage accrued is multiplied by the final average salary to determine the benefit. The benefit accrual patterns of PEPs are similar to DB plans. They are also regulated and insured as DB plans but they resemble DC plans in the sense that each employee has an individual retirement account or 'pension pot' (Turner, 2010). One advantage of PEP is that contributors can know the value of their accounts at any given time. However, the practicability of this plan for developing countries, most of which are largely dominated by informal sector activities is doubtful. The reason is that people in this sector have unreliable sources of income thereby making it difficult to be part of an annuity contributory pension plan. Also, the informal sector operators hardly keep track of their earnings; they often change trade depending on the season. Therefore, committing oneself to pension plans of this sort may be problematic.

3.2.4.3 Floor Offset Plans

Floor offset plans are also a combination of DB and DC plans with the intention to minimize risk and maximize workers' benefits (Turner, 2010). The DB aspect provides a guaranteed minimum benefit, protecting workers against potential investment risk. The DC plan grants workers additional opportunities to accumulate extra retirement income that is subject to risk. The practice here is that, upon retirement, the DC component of a floor offset plan is converted into an annuity and will not be received as a lump sum payment. This aspect of the plan is consistent with the World Banks's options provided in its first (1994) publication regarding the second pillar of the multi-pillar pension system (see section 3.3.4.2).

3.2.4.4 Multi-Employer Plans

Multi-employer plans are largely DB in nature but have some characteristics similar to DC plans. Typical among these is the portability of funds within a network of employers. Usually, these plans are preferred more by skilled workers who have the flair to change jobs frequently or hold multiple employments (Turner, 2010). With this plan, employers within an association or network agree to manage the retirement plan on behalf of employees. This allows the employees to grow their benefits as long as they remain within the network or the sector. According to Turner (2010), technological advancement makes these plans increasingly easier to operate for larger groups of employers. This plan may also benefit less advanced countries where individuals often change jobs from one sector to another due to their skills and abilities. The funds accumulated in DC plans can be moved between different employers or retained until the employee retires.

3.3 Models of Pension Systems

As indicated earlier, there are different types of retirement and pension plans. Present models of pension systems are generally used as a guiding framework towards the formulation of new pension systems and reforming existing ones. According to Wang, Zhang, Shand, and Howell (2014), several emerging concerns in social security and pension systems such as administration and governance could be assessed by these frameworks. International organizations such as the World Bank, the International Labour Organization (ILO), the Geneva Association, and the International Monetary Fund (IMF) have advocated a multi-pillar approach to pensions. Generally, the multi-pillar also known as the multi-tier approach developed by the World Bank and the ILO is adopted in pension systems designs and reforms due to its comprehensive nature. Nevertheless, there are some substantial differences in the models promoted by these two important organizations which are discussed in the sections below.

3.3.1 The ILO's contributions to the field of pension

Since its foundation in 1919, the ILO has played a phenomenal role in the development of social security systems worldwide, including pension systems. The Organization's contribution to the field of pensions is mainly:

- The development of standards to be followed jointly by governments, employers and employees which constitute the guiding principles for policy design and implementations.
- Its significant role in the development of instruments for the assessment of the economic, financial and actuarial implications of pension systems.
- Provision of a continuous technical advisory support to many pension systems designed around the world (ILO, 2018a)

3.3.2 The ILO principles as point of departure for designing and reforming pension systems

A distinguishing feature of the ILO's work, especially if compared to other international organizations, is its commitment to assist nations in their efforts to build systems through social dialogue. The objectives, functions, design, and reforms of pension systems by the ILO are guided by its eight principles embodied in the International Social Security Standards (ISSS). The guiding principles are:

Universality: Social security is regarded as a human right, which practically expresses the need to guarantee universal protection and safety to everyone regardless of his/her social or economic conditions. This is captured in the ILO's Philadelphia Declaration (1944) that states "poverty anywhere constitutes a danger to prosperity everywhere". This right is however more difficult to enforce in developing countries than in advanced countries due to governments' budget constraints and the economic stage of development (ILO,1944).

Social Solidarity and Collective Financing: At the center of social security is social harmony and financial resource pooling which forms part of the ILO's standards. A jointly financed protection system may produce positive redistribution effects and the financial and labour market risks of the system are transferred to the government rather than to the individual. This arrangement is opposed to privately managed pension plans which are built on an individual savings account.

Adequacy and predictability of benefits: DB pensions as prescribed by law are based on the principle of adequacy and predictability. The Social Security Convention, 1952 (No.102) and the Invalidity, Old-Age and Survivors' Benefits Convention, 1967 (No. 128) recommended income security for elderly individuals who have reached retirement age through earnings-related contributory pensions or tax-financed/means-tested flat-rate pensions. These standards also call for adjustment of pensions from time to time since the cost of living and earning levels are not static.

The overall and primary responsibility of the state: This principle requires that the state is the backbone for social protection with the aim to ensure the economic, fiscal, and financial sustainability of the system. In this regard, social justice and equity are enhanced through effective collection and allocation of financial resources needed to deliver the protection guaranteed by national law as captured in ILO's recommendation No. 202 (ILO, 2012). This requirement may be difficult to fulfill in developing countries that face large social demands.

Non-discrimination, gender equality, and responsiveness to special needs: Pension design should enhance gender equality by adopting financing and benefit distribution procedures and providing eligibility conditions that prevent gender discrimination emanating from market distortions (ILO, 2012).

Financial, fiscal, and economic sustainability: This principle refers to the robustness of the economy to finance the costs of pensions now and in the future. The sustainability of pension systems is a huge task for the state. This requires the use of all government apparatus to ensure a functional and comprehensive social protection system. According to ILO recommendation No. 202, the government must ensure the sustainability of the national pension system when demographic aging occurs. Once again, a requirement that may be difficult for developing countries to comply with due to the magnitude of diverse fiscal demands they face.

Transparent and sound financial management and administration: ILO Convention No. 102 and Recommendation No. 202 indicate that finance, administration, and management of pension systems require good governance to ensure compliance with the legal and regulatory frameworks (ILO, 2012).

Involvement of social partners and consultations with other stakeholders: This important principle emphasizes the need for representation of beneficiaries in social security governance bodies. In this way, the principle of participatory management of social security systems established in ISSS (Article 72(1) of Convention No. 102) is affirmed.

Based on these principles, the ILO expressed doubt about the multi-pillar-idea recommended by the World Bank during the 1990s, especially the supposition about the advantages of private pension schemes. Despite these initial criticisms, in 2000 the ILO reversed its position and adapted a multi-pillar-idea based on its institutional guidelines referred to as Social Safety Network. It proposes four different dimensions of pension systems from Tiers zero to three (Gillion, Turner, Bailey & Latulippe, 2000). The ILO used the term "Tier" to describe its multi-dimensional pension systems as opposed to "Pillar" used by the World Bank. However, these terms are used interchangeably by most countries and the same applies to this research. The ILO multi-dimensional pension is discussed in the following sections.

3.3.3 The ILO Multi-Pillar Pension Model

The key elements of the ILO multi-pillar pension model rely on the principles described in the previous section. The notion behind the concept of a multi-pillar pension system is the possibility of merging different social protection instruments, each of which fulfills one or more goals targeted at a sound national pension delivery. Figure 3.1 shows the key components of the ILO multi-pillar pension model.

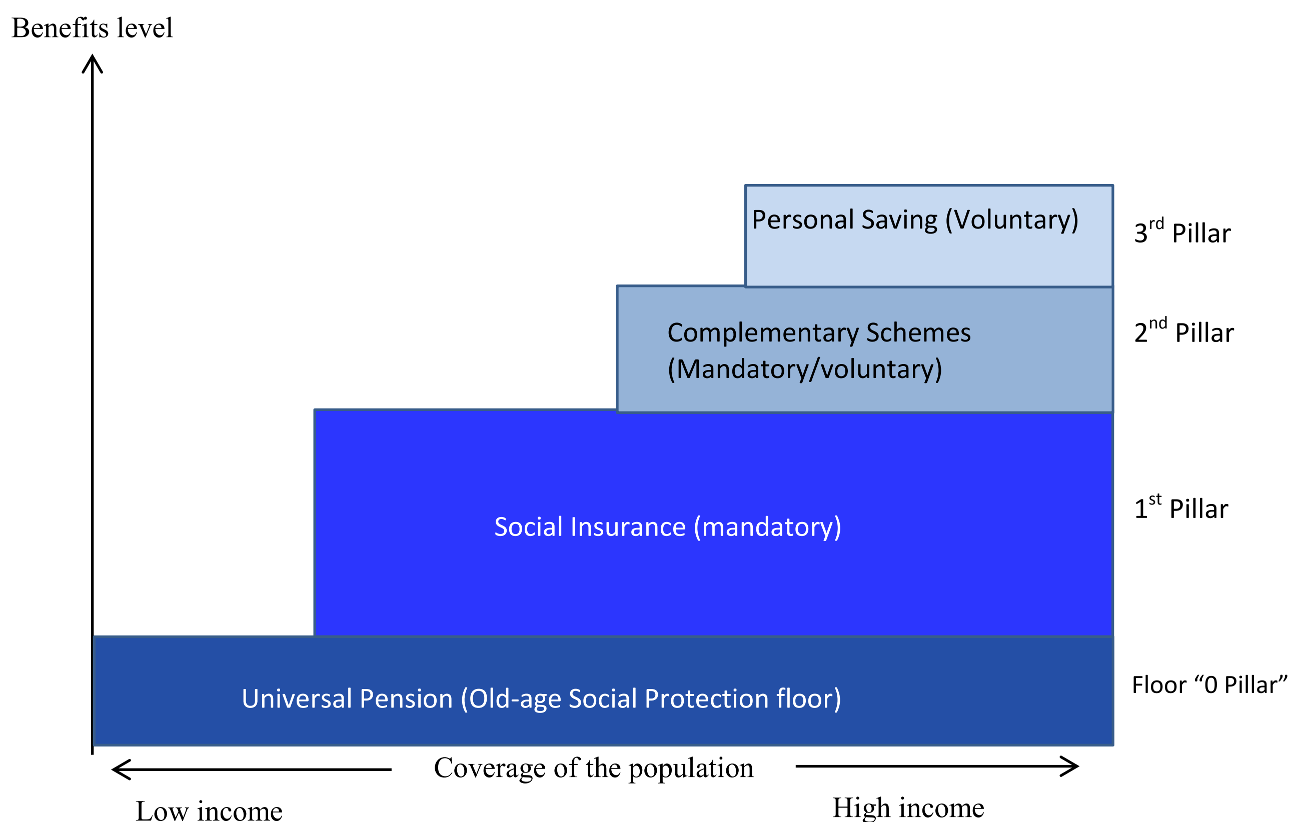

Figure 3.1: A diagram illustrating the ILO's Multi-Pillar Pension
Source: ILO (2018b).

3.3.3.1 Pillar-Zero (the Pension Floor)

The objective of this pillar is to provide a general social protection floor to all older persons. This pillar is usually a typical social assistance programme that provides a non-contributory pension benefit funded by the government. Universal coverage can be achieved through a non-contributory scheme or means-tested pension scheme where higher-income earners are excluded from the benefits. Pillar-Zero is one of the main concerns for most developing countries which are usually characterized by high levels of unemployment, poverty, and despondency. This pillar aims to guarantee that the basic health and income needs of especially the poor elderly are met by maintaining at least a minimum living standard. The operation of this kind of scheme requires a high

level of commitment by the state, particularly concerning appropriate regulation, supervision, and fiscal viability.

3.3.3.2 Pillar-One (Social Insurance Pillar)

The design of this pillar follows a typical DB pension system with mandatory contributions from both employees and employers. The objective is to deliver higher levels of pension to retirees for a moderate living standard. It usually targets a minimum replacement rate of 40 percent for 30 years of regular contributions and a lower benefit to those who have contributed for 15 to 30 years (ILO, 2018b). This could be managed by the government or the private sector with sound financial governance to ensure its sustainability.

3.3.3.3 Pillar-Two (Complementary Pillar)

Pillar two is designed to enhance pension income through additional mandatory or voluntary contributions. It can either take the form of DB or DC plans, occupational or non-occupational and financed by employer's contributions and usually managed privately. Its purpose is to augment pension benefits that will be received from pillar one. Regulation and supervision of this pillar are again largely under the auspices of government and it requires a high level of commitment to achieve its goals.

3.3.3.4 Pillar-Three (Voluntary Personal Savings Pillar)

This pillar is a set of voluntary private pension schemes designed to complement contributions from other pillars. It targets individuals who have the financial capacity to make additional savings towards their retirement voluntarily. The scheme is generally privately managed but under government regulations and supervision. Table 3.2 summarises the pension systems recommended by the ILO in Gillion, Turner, Bailey, and Latulippe (2000).

Table 3.2: Summary of the pension systems recommended by the ILO

Pillar Zero	Pillar One	Pillar Two	Pillar Three
Social Safety Net, Mandatory	Mandatory	Mandatory or voluntary	Voluntary
Publicly administered	Publicly or privately administered	Publicly or Privately administered	Privately administered
Means-tested	Pay-As-You-Go (PAYG) or Partially funded	Partially funded	Savings and non-pension benefits.
Tax-financed	Funded (Employer-Employee Contribution)	Individual or employer contribution	Funded by individuals and state

Source: Adapted from Frinlander (2012).

Pension schemes included under pillars two and three impose financial and macroeconomic risks on individual contributors. In this regard, adopting these pillars by a country should not substitute pillars zero and one (ILO, 2005).

It is important to note that unlike the World Bank, which backed its recommendations with explicit criteria or modalities for achieving them, the ILO only focused on the principles and guidelines without any laid down positive criteria for its execution. The ILO principles are regarded as normative and are based on social criteria (Frinlander, 2012).

3.3.4 The World Bank Model

Since the mid-1980's the World Bank has made efforts to respond to retirement needs and has focused on strengthening the social insurance and contractual savings systems of old-age income support to countries. The initiative by the World Bank is driven by forces such as the global aging population, the deterioration of informal and traditional family support systems, and weaknesses in

the governance and administration of existing pension systems (World Bank, 2005a). The World Bank's quest for retirement income security emanates from the prevailing changes in the labour market with rising participation of women in formal employment, job insecurity, and rising local and international labour migration (World Bank, 2005a).

3.3.4.1 The need for Pension Reforms

In their report titled "Averting the Old Age Crisis", the World Bank (1994) indicates that more than half of the world's old population depended solely on informal and traditional arrangements for income security. They usually receive food, shelter, and care from close relatives and extended family members. Over time, significant changes occurred, such as the breakdown in the traditional system, shifts to the nuclear family system, migration, urbanization, and society's inclination towards market-oriented activities have weakened the communal ties and attention to the care of the aged, especially in the informal system. This situation is worsening because the aged population is rising due to improved medical care and reduced fertility, especially in advanced countries (World Bank, 1994). Addressing this changing environment, and also to meet the needs of developing countries (especially in Asia and Africa), the World Bank published a document that proposes a move towards a formal system of income security without harming the informal system further, as well as lessening the fiscal burden on the government.

3.3.4.2 Functions of Pension Reforms

According to the World Bank (1994) for a pension system to be effective, the functions of saving, re-distribution, and insurance must be met simultaneously. These are briefly discussed below:

- Saving is explained as income smoothing over a person's lifetime. People save more during their working life and will fall back on accumulated savings when they exit the labour market at old age.

- Redistribution encompasses the shift of lifetime income from one person to another, usually from high-income individuals (workers) to low-income individuals (pensioners).
- Insurance involves protection against the probability that economic fluctuations such as recession, inflation, or bad investments decisions will erode the real value of savings. Members are also insured against annuity and longevity risks (World Bank, 1994).

The main recommendation of the World Bank's 1994 report is that old age security programmes should provide for all three functions, irrespective of the role of government. Put differently, countries should rely on multiple financing and pension arrangements that share responsibility among multiple pillars for old-age support.

In the 1994 World Bank document, a three-pillar pension model was recommended, and the functions of savings and redistribution were specified. According to the model, the first pillar consists of a flat benefit or a means-tested model that is publicly financed and managed. It is non-contributory and anti-poverty in nature. Typically, it is a social assistance programme that corresponds with the first Tier of the ILO recommendation.

For the second pillar, the contribution is mandatory and benefits are provided to contributors by the proportion of their accumulated benefits. This pillar is a DC system that is privately managed. Nonetheless, beneficiaries could be provided the opportunity to convert their retirement account balances to a lifetime annuity and therefore cannot be regarded as a purely DC system.

The third pillar is a voluntary and fully funded pension scheme, similar to pillar two in terms of its objective and form. This pillar provides individuals the opportunity to make additional saving towards higher retirement benefits (World Bank, 1994).

In 2005, the World Bank revised the original 1994's version of its three-pillar model to make it more comprehensive. The new version came with two additional pillars, resulting in a five-pillar model. The changes included the introduction of:

- A non-contributory zero pillar which is aimed at the lifetime poor.
- A fourth pillar making provision for informal security derived from intra-family or intergenerational sources with financial or non-financial assistance to the aged. This may include access to food, clothing, housing and health care.
- In addition to the two new pillars, there was a modification to complement the original first pillar. The pillar has been changed from a flat benefit model to a publicly managed contributory system.

This newly recommended version of the World Bank's multi-pillar pension system has received extensive attention and has been adopted by many countries including Chile, Peru, El Salvador, Uruguay, Costa Rica and Argentina. The World Bank has emphasized that there is neither a complete general solution relating to issues of pensions nor a generic reform model that can be used in all circumstances. For this reason, the World Bank developed principles of analysis and a conceptual model to guide its work in assisting countries to reform their social security and pension schemes.

The recommended framework of pensions by the World Bank entails an assessment of initial conditions, the capacity of nations, a statement of core objectives, and the evaluation of possible modalities for pension reforms. To achieve the set objectives, the World Bank designed a multi-pillar model for potential pension reforms, evaluated against a set of primary and secondary criteria. The aim is to arrive at a result that is best suited for country-specific needs and objectives. The framework of the World Bank provided additional design principles in evaluating reform

choices and suggesting considerations for the reform processes. The various components of the World Bank framework for pensions systems are discussed below.

3.3.4.3 Initial conditions

According to the World Bank (2005a), an effective and efficient framework for pension reforms begins with an assessment of the initial conditions. These include taking cognizance of:

- **The inherited systems:** This refers to the composition and examination of the existing pension systems, thus the nature of the schemes; whether mandatory or voluntary, the pension right of workers, other related social security schemes, existing family and traditional support system, old age dependency and poverty incidence.
- **The reform needs of such systems**: Reform needs are determined by subjecting the existing schemes to the criteria of adequacy, affordability, sustainability, robustness and equitability.
- **The enabling environment:** This may or may not be conducive to potential elements of a reform design and process. The enabling environment includes the population's demographic trend; macroeconomic stability; the administrative capacity of management and regulatory institutions; the effectiveness of supervision and efficiency of financial markets, particularly with respect to long-term instruments.

A summary of the World Bank approach is presented in Table 3.3 below.

Table 3.3: Factors the World Bank approach to pension reforms take into account: Summary of Conceptual Framework

Initial Conditions	***I. Inherited System*** • Elderly vulnerability and poverty prevalence in absolute terms and relative to other age groups • Existing mandatory and voluntary pension systems • Existing social security schemes • Existing levels of family and community support ***II. Reform needs*** – such as modifying existing schemes in the face of fiscal unsustainability, coverage gaps, aging and socio-economic changes assessed against the primary and secondary evaluation criteria discussed in III. ***III. Enabling environment*** • Demographic profile • Macroeconomic environment • Institutional Capacity • Financial market status
Core ***Objectives*** of Pension Systems	• Protection against the risk of poverty in old age • Consumption smoothing from work to retirement
Modalities for achieving objectives	• ***Zero Pillar*** – non-contributory basic benefits financed by the state • ***First Pillar*** – mandatory with contributions linked to earnings and objective of replacing some portion of lifetime pre-retirement income. • ***Second Pillar*** - mandatory DC plan with independent investment management • ***Third Pillar*** – voluntary savings taking many forms (e.g. individual savings; employer sponsored; DB or DC) • ***Fourth Pillar*** - informal support (such as family), other formal social programmes (such as health care or housing), and other individual assets (such as home ownership and reverse
Primary Evaluation Criteria	• Adequacy • Affordability • Sustainability • Equity • Predictability • Robustness

Secondary Evaluation Criteria	Contribution to output and economic growth through: • Lowering labor market distortions • Contributing to savings • Contribution to financial market development

Source: Holzmann, Hinz and Dorfman (2008).

3.3.4.4 Setting out core objectives

After a successful evaluation of the initial conditions and the capacity to improve the enabling environment of pension systems that need reform, the World Bank (2005a) model proposes that attention should be devoted to modalities needed to best achieve the core objectives of pension systems. These objectives are; insurance against old age income insecurity and consumption smoothing from one's work-life into retirement. This section of the framework also suggests that in identifying the objectives of the pension system, there is a need for policymakers to deliberate on broader questions of social protection and social policy which consider poverty and vulnerabilities of different income groups. In this context, relevant questions to be answered are:

- Should scarce fiscal resources be committed to old-age poverty reduction?
- To what extent should income be redistributed through pension systems?
- And how can the pension system ensure that the redistribution is fair, transparent and progressive?

Other key considerations in setting the core objectives point to the measures required to strengthen the enabling environments suitable for reform options. The point of departure of the World Bank (2005a) pension framework is that, once these core objectives are identified, it becomes somewhat easier to ascertain the mandate for the reform of the public pension system.

3.3.4.5 The multi-pillar modalities

The World Bank's pension model flexibly applies a five-pillar model. 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 discussed in the next sections.

(a) A non-contributory or "zero" pillar

The non-contributory pillar focuses on poverty alleviation to ensure that every elderly person will receive at least a minimum level of income protection. The feasibility of this pillar depends on the fiscal strength of the country, the prevalence and needs of other vulnerable groups, and the design of complementary elements of the pension system. The importance of the "zero pillar" is emphasized because of its objective of poverty reduction which has become the focal point of economic growth and development policy in many countries over the years (Bloom & McKinnon, 2013). This pillar protects the lifetime poor and other vulnerable individuals through universal or means-tested cash transfers. These schemes have been widely used in low and middle-income countries (Grosh & Holzmann, 2008).

(b) A Mandatory "first pillar"

The mandatory first pillar deals with contributions that are linked to earnings which have the objective to partially reduce pre-retirement income and save it towards retirement. The first pillar addresses low earnings and contingencies such as disability, unemployment, and financial market risks. The pillar usually takes the form of a DB plan and is financed on a PAYG basis. It is therefore subject to demographic and political risks. Ghana's Tier-One pension policy is an

adoption of the World Bank's first pillar. The country's compliance and the intricacies of implementation are analysed in the later chapters.

(c) A Mandatory "second pillar"

This pillar is linked to individual capitalization account (DC plan) with design options ranging from the choice of investment managers, investment options, portability of account, and options for withdrawal (Bloom & McKinnon, 2013). Mandatory DC plans help workers to accumulate additional savings towards retirement. The accrued benefits depend on individual contributions and investment performance. The DC plan encourages national savings and financial market development (see Table 3.1). Inadequate supervision and regulation can plunge contributors into agency risk which may result from high administrative costs and market fluctuations. Similarly, the mandatory plan may also suffer from longevity risks but this can be prevented through automatic annuitisation. Ghana's Tier-Two pension scheme is an adoption of this pillar and the question of whether it is adequately enforced and achieving its objectives will receive attention in chapter six.

(d) A voluntary "third-pillar"

The voluntary pillar may consist of individual savings for retirement or could be employer-sponsored. The scheme is essentially flexible, discretionary and allows contributions at the convenience of contributors. Under this pillar, contributions are linked to individual accounts. It is supplementary to other pillars but includes similar risks as the second pillar. This voluntary pillar allows individuals to willingly join a pension programme. It is suitable for most developing nations such as Ghana that has a large informal sector that is not covered by the mandatory DB plan that largely favors formal sector workers.

(e) A non-financial "fourth pillar"

This fourth pillar covers informal security such as intra-family sources of financial or non-financial assistance to the aged. This may include access to food, clothing, housing, and health care. The availability of these support systems for the aged has implications for the design and implementation of the other pillars. According to the World Bank (2005a), certain pillars are better designed to address old-age poverty than others. For example, the zero pillar provides universal income support to the lifetime poor and other vulnerable members of society. It also provides wider coverage for countries with a large informal sector where the first and second pillars show discrimination against workers with irregular wages. Furthermore, developing well-supervised voluntary schemes could effectively serve as a supplement to the low income of the informal worker at retirement (World Bank, 2005a). It is argued that the mandatory first and second pillars may not yield adequate old-age income, but that a combination of zero pillar and a more extensive voluntary pillar may improve the 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. The multi-pillar model is summarized in Table 3.4

Table 3.4: Summary of the modalities for achieving World Bank multi-pillar pension model

Pillar	**Objective**	**Form**	**Target groups**	**Funding**
A non-contributory Zero pillar	Elderly poverty protection	Publicly-funded pension (universal)	Life time 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 PAYG basis)	Formal sector	Taxed-financed
A mandatory Second pillar	Elderly poverty protection and consumption smoothing through 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	Life time 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	Life time poor, informal and formal sector	Financial and nonfinancial assets

Source: World Bank (2005a)

3.3.4.6 Evaluation Criteria

After the consideration and application of the multi-pillar model, the World Bank (2008) further proposes that the entire pension system design is evaluated with the aid of primary and secondary criteria that is discussed in the sections below.

(a) Primary Evaluation Criteria

The primary criteria used by the World Bank (2005a) are the ability of the pension reform to maintain adequacy, affordability, sustainability, equity, predictability, and robustness while ensuring that the objective of income smoothing and enhancing the welfare of the aged is achieved at a country level. These criteria are now discussed briefly.

1. **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.
2. **Affordability**: It is required that the system must be within the financing capacity of individuals and their respective nations and does not impose a heavy fiscal burden on the state or unduly displace support for other social or economic needs.
3. **Sustainability**: Another important aspect of a pension system is its sustainability. The framework requires that the pension system possesses a sound financial standing that can be maintained over a long period of time.
4. **Equitability**: An equitable pension system requires that some redistribution occur by channeling income from wealthy individuals to the lifetime poor to promote social fairness.
5. **Predictability**: To ensure predictability, the World Bank (2005a) framework proposes that**:**

   i) There is a legal benefit formula upon which computations are based. Arbitrary determination of benefits by policymakers or managers infringes on transparency and fairness of the system.

   ii) The formula in the DB system is designed to protect individual contributors against price fluctuations (inflation indexed). Likewise, the investment policy in the DC system may protect individuals against market volatility prior to retirement, but bears the market risk after retirement.

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

(b) Secondary Evaluation Criteria

Beside the primary criteria, the World Bank (2005a) extended the pension systems framework to include secondary evaluation criteria which seeks 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.

Irrespective of the pension system design, benefits are ultimately linked to economic environment and output. It is therefore essential that the systems over time contribute to growth and output to be able to deliver the promised benefits.

3.3.4.7 Scrutiny of the Multi-Pillar Pension System

Although the World Bank (2005a) multi-pillar pension system has gained ample recognition, some researchers expressed reservations. For example, the ILO (2005) regards the demographic concerns raised by the World Bank as an exaggeration, because rising life expectancy in most advanced countries should not be viewed as a crisis, but as changing demographic phenomenon due to improvements in medicine and medical care in general (ILO, 2005; Ervik, 2005). This view of the ILO can be debunked since a rising life expectancy can create a funding crisis for a PAYG pension scheme. According to the ILO (2005), the actual pressures of pension systems are due to widespread poverty, limited pension coverage, and intense global economic hardship

experienced by most elderly (Maier-Rigaud, 2005). The ILO expressed its doubts about the World Bank's proposal of private pension schemes. The ILO perceives that funded pension schemes do not provide additional protection against aging populations, but only ensure higher living standards for participants (ILO, 2005). Moreover, private pension schemes are not necessarily cheaper to administer than public ones, neither are they more efficient at investing contributors' money as purported by the World Bank (cited in Gillion, 2000).

The criticism of the ILO is most probably based on a misunderstanding of the World Bank's position on pension reforms. One could argue that it is better to have additional income (lump-sum or annuity) that may improve the living standards of people who have made additional contributions to voluntary pension schemes than to depend solely on a basic state pension (PAYG), which may not be sufficient to reduce old-age poverty. Also, the accrued extra income these individuals receive may alleviate the fiscal burden of governments. The World Bank explicitly points out that the voluntary private funded scheme is not a substitution for the other pillars: "finally, pillar three cannot be a full substitute for pillars zero, one, and two, since one of the primary reasons for public involvement in pension provision is to counter myopia and prevent old-age poverty" (World Bank, 2005a:100).

Stiglitz (2004) also raised questions regarding the private management of pension funds proposed by the World Bank. He argued that the World Bank's position may not work well in countries with relatively undeveloped capital markets or insufficient financial education on the workings of the capital market. He further argued that even in countries where the population is well-educated and there are relatively mature capital markets, the administrative cost of private pension management is often very high. In Stiglitz's view, private management of individual accounts could lead to high financial risks that can compromise the insurance component of old

age income (Stigliz, 2004). However, this argument by Stigliz (2004) raises questions, because publicly administered funds may also make bad investments decisions, especially due to pressures from the government. For example, between 1981 and 1988, the public pension fund of Zambia invested only in public securities, resulting in a staggering average yearly loss of 23 percent (World Bank, 1994). In Ghana, SSNIT is the state institution that administers the pension funds of civil servants invested in dubious corrupt organisations with some of the managers prosecuted in 2017.

Willmore (2000) opined that the only objective of a pension system is to provide minimum income security to the lifetime poor instead of extending focus to the needs of the rich who are already endowed with assets to take care of their retirement needs. Willmore is probably oblivious of the fact that middle-income individuals may not make sufficient provision for retirement and may become a burden to the state. He further suggested that an ideal pension system is one where a universal first pillar covers every resident without regard to wage history and is exclusively financed by tax. He added that the rich can invest in additional annuity plans to supplement the basic state pension, therefore does not need any mandatory contributory pension plan as enshrined in pillar two of the 1994 version of the World Bank's recommendation. Willmore (2000) cited New Zealand as the system that operates quite well and could serve as a model for developing nations. Although Willmore may have a point, the practicality of his proposal for most developing nations could be questioned as these countries have many economic challenges perpetuated by weak macroeconomic fundamentals. Do most developing nations have the capacity to run non-contributory pension systems? Can they develop a long-term savings pool amidst persistent macroeconomic fluctuations? Answers to these questions are important since macroeconomic conditions in most developing countries are weak (World Bank, 2005a). For instance, most of

these countries including Ghana experience a high debt-to-GDP ratio, fiscal and trade deficits, double-digit inflation, and fluctuating growth rates. This indicates that such governments may lack the financial capacity to fully commit funds towards a universal pension scheme.

Moreover, contrary to the views expressed by Willmore (2000), the World Bank (1994) provided cogent reasons in support of its multi-pillar pension recommendations. According to the World Bank:

- pension funds managed by the state are rarely fully indexed for inflation. For example, in the 1980s real benefits of pensioners fell by 60 percent in Venezuela because the pension system was not indexed against inflation.
- high budget allocations to pensions by governments are at the expense of other equally important sectors of the economy. In 1989, 15 percent of Austria's GDP was devoted to pensions and 40 percent of government expenditure went to old age benefits. Reforms are necessary to prevent this problem from escalating especially as life expectancy increases.
- publicly managed funds are often mismanaged. In Zambia more than half of pension contributions in 1988 were used to settle administrative expenses.
- high payroll taxes distort labor market operations and reduce growth if pensions are tax-financed. In Hungary, at the time of the publication of the World Bank (1994) report, pensioners constituted over 25 percent of the population. The average retirement age was 54 years and 33 percent of budget allocation was needed to finance pensions. This had adverse implications for the labor market and consequently, national output (World Bank, 1994).

Other researchers also entered the debate on the economic reforms of pensions, especially on the countries that subscribed to the World Bank's multi-pillar model of pensions. According to

Heneghan (2015), during the Global Financial Crisis in 2008, Argentina reversed its private pension pillar and returned resources to the state fold. Hungary also made a similar reversal later in 2010. This trend became a broader phenomenon with countries such as Ecuador, Poland, Kazakstan, Slovakia renationalised all or part of their private pension pillars (Heneghan, 2015). The same trend was also observed in Eastern and Central Europe with Latvia, Estonia, Russia and Lithuania suspending contributions to their private pension pillars. The planned privatisation of the Ukrainian pension system was similarly suspended and the more recent privatisation of the Czech Republic's pension system has also been reversed (Heneghan, 2015). Heneghan posits that these developments raise substantial questions about the desirability and sustainability of a mandatory private pension system modelled on the basis proposed by the World Bank (2005a). He asked how sustainable the World Bank's model is for global financial markets in distress (market volatility) as occurred in 2008.

It must be noted that the Global Financial Crises of 2008 was an extreme occurrence. One needs to ask whether all future policies should focus on the possible recurrence of such an event. The outbreak of the COVID-19 pandemic in 2020/21 demonstrates that uncertainties are part of life. Hence it may be erroneous to base policy planning only on such occurrences.

Heneghan (2015) identified two main flaws in the World Bank (2005a) multi-pillar pension model. Firstly, there is a market failure problem in managing mandatory private pension accounts. In this case, an individual fund manager must allocate investment shares to each pensioner, which may contradict administrative efficiency requirements of a public pension system that base its calculation on a basic formula. Market volatility during economic downturns impacts pension fund holders and can significantly reduce the value of pension proceeds. Secondly, a "double payment" problem may occur during the transition from a public to a private pension system. It is argued that

those already on pensions or close to it may not be able to set aside sufficient private resources for retirement. Therefore, their pension earnings must be funded by the current workforce. Meanwhile, with privatisation, the current workforce must simultaneously save for its retirement. This may double the cost of pension provision for individuals at the transition stage.

Heneghan (2015) argued that even though the World Bank recommended that public sector borrowing should fund the transition stage; this may be problematic because the transition costs may vary between countries. For example, accession to European Union membership requires that the budget deficit of countries should be less than 3 percent of GDP. Given that the pension transition costs were as high as 1.8 percent of GDP in Poland for instance, renationalising became an obvious choice for the government. Heneghan (2015) concluded that "whilst the spread of pension privatisation was quick, its reversal has been even more rapid and dramatic". This suggests that in respect of providing retirement income, the state still has a major role to play in the future (Heneghan, 2015). Global and national economic stability is therefore an important requirement for the implementation of pension reforms with the caveat that current stability cannot guarantee future stability.

If Heneghan's analysis and conclusion are anything to follow, the survival of the World Bank's multi-pillar pension model can be questioned in times of major market shocks as experienced in the early years after its introduction. However, countries with a well-established multi-pillar system were successful and survived the shocks. Therefore, it can be argued that the timing of the implementation of the World Bank's multi-pillar pension system was unfortunately very close to the Global Financial Crisis in 2008 that was foreseen by very few people. Despite the problems identified, a multi-pillar approach may still be necessary because it may not be fiscally viable for government to take full financial responsibility for retirement. It can be argued that

workers must also take responsibility for their retirement, especially if state support may not be able to guarantee retirement income security or at relatively low levels. The World Bank, however, did not rule out issues of regulation, capital market development, and market fluctuation in its multi-pillar approach (Holzmann & Hinz, 2005).

The principal advantage of a multi-pillar pension scheme lies in risk diversification and to counter myopia (encourage people who lack the foresight to save) and prevent old-age poverty (World Bank, 2005a). The World Bank in its recommendation for a multi-pillar pension leaves some scope for the state to provide pensions. The World Bank approach makes provision to make adaptations based on the prevailing demographic, economic and political environment (World Bank, 2005a). The main differences in the World Bank and the ILO pension systems are summarized in Table 3.5.

Table 3.5: Key differences between the pension recommendations of the World Bank and the ILO

Institution	The World Bank (WB)	The ILO
Philosophy	Multi-Pillar idea	i. Social Safety Net ii. Non-Pension Related Aspects
Programme	i. Three-Pillar Pension System ii. Five-Pillar Pension System	i. Social Safety Net and Three-Tier Pension ii. Pension System Outcomes
Interest	i. Privatization of pension systems ii. Economic development in general and economic growth specifically	i. Public Pension System ii. Social support with human at the centre of development
Nature of Argument	Largely positive economics	Largely normative and moral
Administration	More private and less public	More public and less private
Aims	Comprehensive pension, economic growth and efficient market systems.	Comprehensive social support system, stable and social support for all.

Source: Compiled by author (2019)

3.3.5 Reasons for the predominance of the World Bank approach

Using Table 3.5 it can be argued that the World Bank multi-pillar global pension policies are simpler and clearer than those of the ILO. Its arguments for a multi-pillar system are based mainly on financial and economic principles, which is more realistic given the global economic situation in relation to pension finance. The principal advantage of the World Bank's proposal lies in its risk diversification and its attempt to counter myopia to prevent old age poverty (World Bank, 2005a). The ILO's arguments are based more on morality or normative issues that can be disputed and may not stand the test of time given the dynamics and evolving nature of the world's economy and demographic transitions.

In addition, the World Bank's pension policies have firm support from other influential and powerful financial institutions such as the IMF and the U.S.A Department of the Treasury (Washington Consensus), which enables the Bank to give financial assistance to especially developing countries that has to subscribe to their pension policies when the need arises. The ILO on the other hand has limited financial powers in the world economy.

One can further argue that the World Bank is one of the important economic governors of the world. It therefore formulates policies and, regulates and supervises its implementation. The World Bank provides assistance to countries that subscribed to its pension system (Romero-Robayo & Whitehouse; 2015). The ILO however, lacks the financial prowess to enforce its recommendations.

Another argument highlighting the power of the World Bank is that it engages more aggressively in the promotion of its policy recommendations. The World Bank has been very effective in participating in national pension debates and reforms as can be seen by the adoption of its policies by Brazil, Argentina, Chile, Mexico, Singapore, Mauritius and many other countries. The ILO on the other hand tends to prefer a low key participation. Moreover, the ILO is also not participating in

pension programmes, probably due to the absence of a clear-cut framework and financial strength to support nations that adopts its policies.

Dorfman and Palacios (2012) also emphasized that the framework for pension systems designed by the World Bank is based on data gathered across countries on key indicators such as pension expenditures, administration and coverage for several developing countries. The model of the World Bank is thus evidence based and is developed to assist nations that require reforms of their pension systems. The same cannot be said of the ILO.

This study therefore focuses more on the multi-pillar pension system of the World Bank and relies mainly on its framework for critical analysis.

3.4 Conclusion

This chapter discussed three main pension types identified by the World Bank. There was an emphasis on the two most widely used types: Defined Benefit and Defined Contribution plans. Differences between these two plans emerged, challenges identified, and proferred solutions analysed. Differences notwithstanding, it was difficult to determine beforehand whether a country would be better or worse off under a PAYG or funded pension plan. The recommendation is that a combination of both schemes may be superior.

The second section of the discussion focused on multi-pillar pension models. Two main pension models: the World Bank and the ILO multi-pillar models were analysed to highlight the advantages of the World Bank model above the ILO model. Evidence shows that the World Bank based its arguments for the multi-pillar system mainly on financial and economic principles whereas the ILO dwelled more on moral and normative issues. Furthermore, the World Bank has a firm financial stand to assist countries in implementing its recommendations while the ILO lacks this capability.

This study relies on the recommendations of the World Bank for a multi-pillar pension system as its point of departure.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

Mohajan (2018) asserts that scientific research involves an explicit, disciplined, and systematic approach to achieve the most appropriate results. As mentioned in chapter one, the research method applicable for this study is determined by the objectives of the study (see section 1.5). Gathering data about the main issues of the pension system in Ghana informed the researcher to adopt a qualitative research method. The philosophical foundation adopted for the qualitative research and the case studies design for inter-country comparison are also discussed. The methods employed for data collection in this study are document review and in-depth interviews. Finally, procedures for data gathering, as well as data analysis, are discussed.

4.2 Research Approach

According to Austin and Sutton (2014, 1), "qualitative research involves asking participants about their experiences of things that happen in their lives. It enables researchers to obtain insights into what it feels like to be another person and to understand the world as others experience it". Creswell (2016) also asserts that a qualitative researcher collects and works with non-numerical data and seeks to derive and interpret meaning from these data that helps to understand social life through the study of targeted populations or places. This type of research produces descriptive data that the researcher must interpret using systematic methods of transcribing and analysis of trends and themes. Thus, results from this approach are descriptive rather than predictive. Another important aspect is the description of life experiences and the meaning giving to the life experiences. A qualitative approach is warranted when the nature of research questions require more

exploration (Mohajan, 2018). The research questions often begin with *how* or *what*, so that the researcher can gain an in-depth understanding of what is transpiring relative to the topic.

The data collection methods usually employed for qualitative research approach are interviews, document reviews, visual data analysis, focus group discussions, and observations (Mackenzie & Knipe, 2006). Although qualitative research has sometimes been criticized as subjective and biased, the qualitative research approach is considered appropriate because it allows for a thorough and detailed investigation of the research problem in real-life situations without the manipulation of original data (Walia, 2015). This approach is followed in this study to assist the researcher in soliciting information that best describes the gaps, challenges, and practices in the Ghanaian pension systems, paving the way for adjustments and improved policy implementation.

4.3 Philosophical Foundation

The philosophical foundation explains the research paradigm within which the study is undertaken. It is the framework of beliefs, values, and methods within which the research is conducted. The choice of paradigm establishes the intent, motivation, and it makes the basis of selections about the research methodology, literature, methods, or research design clearer (Mackenzie & Knipe, 2006). Several paradigms are applied in qualitative research to guide researchers to maintain focus and to provide motivation for a study. The most general ones include positivism, constructivism, pragmatism, and transformative paradigms (Creswell, 2007). These paradigms are discussed in the following sections.

4.3.1 Positivism

Positivism is usually referred to as the scientific method (Creswell, 2007) and scientific philosophical approach. Researchers using this approach examine the social world independently and objectively and strive to detach themselves as far as possible from personal values. Positivists

believe in the possibility of establishing a cause-and-effect relationship and follow regularities to make predictions, as well as to establish scientific laws (Žukauskas, Vveinhardt & Andriukaitienė, 2018). For them reality exists and "a single truth" can be discovered through unchangeable natural laws and principles. Positivists hold the view that the acquisition of knowledge is not related to values and moral content. When conducting qualitative research, positivists seek to test theories and beliefs or describe experiences and characteristics of people in a social setting. They do this through keen observation, interaction, recording, and measurement of opinions of target populations to understand and effectively predict and control other variables (Mackenzie & Knipe, 2006).

Positivists have been criticized because, whereas objective and scientific methods are appropriate for studying natural phenomena, they are less successful when they are applied to social objects (Rehman & Khalid-Alharth, 2016). According to Kivunja and Kuyini (2017), positivists' enquiry is usually applied to quantitative studies and is characterized with the beliefs that: cause-and-effect is distinguishable and analytically separable, results of inquiry can be quantified, and enquiry rests on formulation and testing of hypotheses. In addition, these authors also argue that the positivist paradigm usually applies internal validity, external validity, reliability, and objectivity which are the same validation criteria usually applied during quantitative rather than qualitative research. These characteristics of positivism pose a limitation to its fluid application to this study. This is because the study does not seek to test a hypothesis neither will the data obtained be quantified to determine any cause-and-effect relationship as is usually the case with positivists approaches. Instead, the researcher seeks to explore the experiences of pensioners, management of pension schemes, and challenges of pension scheme implementations with which results are subjected to textual rather than quantitative analysis. Lastly, the qualitative validation techniques of

trustworthiness (see section 4.8) are more suitable for this study compared with the positivists' validation criteria as mentioned earlier.

4.3.2 Constructivism

The constructivist research approach usually studies the real-life experiences of people (Kivunja & Kuyini, 2017) and is guided by studying a phenomenon in its real-life situation. As opposed to positivists, constructivists believe that there is no single reality and therefore social reality needs to be interpreted to discover the underlying meaning of things. They usually recognise the importance of the participants' background and experiences, rely on the participants' perspectives of the situation under study, and interpret it to obtain an understanding of the reality (Creswell, 2007). According to Morgan (2007), research conducted under the constructivist paradigm usually exhibits the following characteristics:

- The admission that the social world cannot be understood from the standpoint of an individual.
- The belief that realities are multiple and socially constructed.
- The acceptance that there is inevitable interaction between the researcher and his or her research participants.
- Emphasis is on understanding the participants and their interpretation of the world around them.
- The belief that causes and effects are mutually interdependent.

In a further explanation, Kivunja and Kuyini (2017) maintain that the main principle of constructivism is that social reality is constructed. Meaning social discovery is subject to the interpretation of the researchers through their cognitive processing of data which is informed by their interactions with participants. Thus, constructivists' research is based and depends on what the

researcher's interests is (Žukauskas et al, 2018). A major criticism against constructivist's research approach is that it fails to incorporate a social justice orientation and advocacy for marginalized groups of people for example the aged, children, and women (Mackenzie & Knipe, 2006). Adopting this philosophical framework alone may not be suitable for this study because this research is comparative, and largely depends on literature surveys of some selected countries. The facts contained in the literature regarding these countries are analysis from different paradigms, both qualitative and quantitative. Some are direct results of numerical analysis (quantitative) and others are from direct human interactions which are documented textually (qualitatively). In this regard, a flexible and more appropriate philosophical framework for this research requires a blend of paradigms rather than relying on a constructivists approach alone.

4.3.3 Transformative paradigm

Transformative researchers attempt to fill the gaps in the constructivists' approach by incorporating a social justice orientation and advocacy for marginalized groups of people. The method projects the voices of the vulnerable and seeks to improve their position in society (Mackenzie & Knipe, 2006). This paradigm requires a qualitative researcher who analyzes unbalanced power relationships and finds means to connect the results of social research to action. Such researchers usually deal with economic, social, and political issues to curb conflicts, power struggles, and social oppression (Kivunja & Kuyini, 2017). Researchers who conform to this paradigm make deliberate efforts to promote human rights and increase social justice, address issues of power, oppression, and trust among research participants, and respect for cultural norms (Martin, 2015).

Commenting on the methodological implications of paradigm choice, Kivunja and Kuyini (2017) criticized the transformative paradigm claiming that it is only suitable for methodologies such as feminist theories, critical race theory, participatory emancipation, disability theories, neo-

Marxist theory, and action research. These methodologies are restrictive and do not allow for a combination of methods that can better reflect what the researcher may deem appropriate for a particular study. Given the ideological frameworks within which this paradigm operates, it may limit more objective investigations. It is therefore not suitable to adopt a transformative paradigm in this study.

4.3.4 Pragmatism

As mentioned in chapter one, pragmatists believe that realities cannot be determined through a single scientific method as argued by positivists and constructivists. According to the proponents of pragmatism such as Patton (1990), Biesta (2010), and Alise and Teddlie (2010), a single-paradigm research orientation is not sufficient (Kivunja & Kuyini, 2017). Pragmatists argue that what is important is a paradigm that will provide research methods that are most appropriate for studying the phenomenon at hand. By implication, the method is problem-centred, and the researchers are free to choose the methods, techniques, and procedures that best meet their needs and scientific research aims. This conception gives rise to a paradigm that advocates for mixed methods as a pragmatic approach to understanding human behavior (Žukauskas et al, 2018). This paradigm has settled the dust between positivists and constructivists (Kivunja & Kuyini, 2017). According to Kivunja and Kuyini (2017), research situated within this paradigm demonstrates characteristics that include the following:

- A rejection of the positivist notion that social science inquiry can uncover the ‘truth’ about the real world.
- Eliminate the need to choose either a positivist paradigm or a constructivist paradigm.
- The choice of research methods depends on the purpose of the research.

- Emphasis is on the 'workability' of research. That is the use of 'what works' without recourse to whether the questions are wholly quantitative or qualitative.
- Adoption of a worldview that allows for a research design and methodologies that are best suited to the purpose of the study.

As indicated, the pragmatic paradigm advocates for research methods (mixed methods) based on the research needs. Therefore, researches conducted within this paradigm draws on methodologies suitable for this scientific approach. This philosophical framework is the most applicable for this study because it is less restrictive and allows for more flexibility within the context of this research. The suppleness of this paradigm provides more room for choices of appropriate methods suitable for this study. The researcher interacted with pensioners and pension fund managers through telephone interviews. The different views were synthesized and interpreted to discover the practical economic or financial condition of retirees. This study also gathered qualitative and quantitative evidence from a wide variety of documents for comparative analysis purposes. The information gathered were the results of a mixture of methodologies from different philosophical perspectives used to achieve the aim of this study.

4.4 Research Design

This study adopted an exploratory research design to analyse issues concerning the pension system in Ghana and comprehend the practices, the compliance with international standards, and the challenges in the system. Exploratory research design is employed to investigate an existing problem to obtain a better understanding. It is an examination of a subject to gain better knowledge in that field and clarify research questions or hypotheses (Pratap, 2019). Research of this nature is bound to result in new ideas, revelations, and insights (Ibid). The design is flexible, inexpensive, and gives a better understanding of the problem. However, an exploratory research design

sometimes provides qualitative data that may be biased and judgmental, and sometimes inconclusive (Pratap, 2019). According to Malhotra and Dash (2011), an exploratory research design provides insight into understanding problems confronting researchers. This study conforms to the structures of an exploratory design and it describes and explores the pension system in Ghana mainly with the aid of the World Bank's Multi-pillar Pension Evaluation model. In addition, three countries (Chile, Mauritius, and Singapore) are selected as case studies for a comparative study that enables a vivid comparison between their pension schemes and experiences with that of Ghana. These countries are selected on the basis that they received assistance from the World Bank pension reform programmes and made exemplary achievements in pension systems implementation. For further reasons for the choice of these countries, see section 5.1

A case study is also considered relevant to this study because it is an empirical research method used to investigate a contemporary phenomenon, focusing on the dynamics of the case within its real-life context (Teegavarapu, Summers & Mocko, 2009). Case studies are applied to answer questions on "how" or "why" and are commonly used to collect in-depth data in a natural setting where the researcher has little or no control over the event. Such studies are typically qualitative, resulting in a narrative description of behavior or experience (Rashid, Warraich, Sabir & Waseem, 2019). The emphasis of case study research is placed on the exploration and description of a phenomenon. The main characteristics of case study research are that it is narrowly focused, provides a high level of detail, and combines both objective and subjective data to achieve an in-depth understanding (Rashid et al, 2019). To achieve these aims, an extensive review of documents is done for each of the selected cases to ensure an in-depth understanding of the issues and to enable comparisons.

4.5 Sampling Method

Purposive sampling methods are employed in this study. Purposive sampling is a non-random sampling technique that relies on the researcher's discretion regarding who can provide useful information on the subject matter (Etikan, Musa & Alkassim, 2016). This method is useful for the selection of pensioners and pension fund managers who are the subjects of interest in this study.

4.6 Sources of Data

The data required to accomplish the objectives of this study consists of both primary and secondary sources. Primary data refers to data that is collected by the researcher directly for the first time and is used for the analysis of the research topic of this study. In-depth interviews are used to supplement evidence obtained from the review of documents and other relevant materials. Pension fund managers and pensioners are interviewed to receive first-hand information on some key pension issues. This study also extensively employed secondary data that are made available in government policy documents on pension and social security, the World Bank, the ILO, and OECD reports on pensions, as well as other relevant journals and publications in the field. Ethical clearance to conduct this study has been obtained (Research permission reference number: 2020-DE-08(SD)-E-MEGBETOR) from the Ethics Committee of the College of Economics and Management Sciences of the University of South Africa (see Appendix I).

4.7 Data Collection Methods

Qualitative researchers apply a variety of methods to gather data and they usually make use of at least two or more methods when conducting a qualitative study (Sutton & Austin, 2015). As indicated in the previous section, the data collection methods applied to this study is in-depth interviews and document review. These are discussed in detail in the sub-sections below.

4.7.1 In-depth Interviews

Researchers use in-depth interviews by meeting participants physically or by telephone in a one-on-one setting. Usually, the researcher interviews participants with a predetermined list of questions or topics for discussion and uses follow-up questions depending on how the participants respond, especially if participants answer with different levels of clarity and detail. This study adopted interviews as a primary source of data for several reasons. Firstly, interviews are appropriate when a researcher is studying people's understanding of the situation they find themselves (Kvale, 2006). Secondly, the purpose of interviews is to discover uncertainties in the minds of individuals that cannot be observed or discovered in other techniques (Patton, 1987). Thirdly, interviews can result in detailed descriptions of the subject under scrutiny and may inform readers about the study results (Merriam, 2002). Fourthly, the participants can be approached again to cross-check or clarify specific information or ask specific questions which were not asked previously.

However, the interviewer-interviewee relationship that may exist during in-depth interviews has the potential to bias the information that is gathered (Roller & Lavrakas, 2015). Another limitation of this technique is what Kvale (2006) calls the "power dynamics" within an interview environment, whereby "the interviewer rules the interview", which has the possibility of "a one-way dialogue" to please the interviewer. It is important that the researcher carefully balances the process to ensure the credibility of the data collection.

4.7.1.1Telephone Interviews

This study had to employ a telephone interviewing technique. The reason for this choice is that the method presents researchers with a more suitable option, and access to participants in situations where it requires that both parties keep an acceptable physical or social distance, as is required since the outbreak of the COVID-19 pandemic. In these circumstances, face-to-face interviews may be

very risky and unsuitable, because both the interviewer and respondents may become infected if one of them is asymptomatic or symptomatic or handle objects contaminated by the virus or enter a high-risk group or hotspot COVID-19 area.

Secondly, interviews by telephone make it possible to interview individuals who may not otherwise be available due to their location. This saves travel time and reduces the cost of data collection compared to face-to-face interviews (Lipschultz, 2010). The cost savings of researching by telephone has been estimated at between 50 to 75 percent compared to face-to-face interviews (Block & Erskine, 2012).

Thirdly, telephone interviews are more appropriate when the need for anonymity is high. Holt (2010) and Sturges and Hanrahan (2004) observe that when interviewees were given the option, many chose the telephone instead of a face-to-face interview and appreciated the choice. Reasons for these preferences are that interviewees perceive a greater level of anonymity and privacy than is the case with face-to-face encounters.

Lastly, telephone interviews are also effective where there is a purposeful and appropriate sampling strategy to answer specific questions (Block & Erskine, 2012). The technique avoids the tricky business of interpreting body language, requires less space and is easier scheduling of potential interviewees who are more willing to participate in the research (Farooq & De Villiers, 2017).

According to Oltmann (2016), the concerns of telephone interviews and answers are generally not different and are equally valid compared to face-to-face interviews. Interviewer's concerns such as pilot testing, contact strategies, which individuals to use for interviews, what questions to ask, sequencing of questions, how many interviewers to use, and how to train those interviewers are similar for telephone and face-to-face interviews.

Qualitative researchers who have used the telephone technique did not find evidence to support the views that the outcome is different from personal interviews (Farooq & De Villiers, 2017). This view is supported by Sturges and Hanrahan (2004) that both interview methods provide data of comparable quantity and quality. The study of Vogl (2013) also found no significant difference in the duration of the conversation, the total number of words spoken, the proportion of words spoken by interviewees, the number of responses, the number of pauses, or the need for clarification between telephone and face-to-face method of interviews. Vogl (2013) concludes that there was no difference between telephone and face-to-face interviews in terms of motivation and level of rapport achieved.

As a means of collecting primary qualitative data, telephone interviews are becoming the preferred method as they deliver high-quality responses with less timing and cost commitments (Lipschultz, 2010).

Despite the positive views, Block and Erskine (2012) posit that interviewing by telephone may negatively affect the interpersonal connections between the interviewer and the interviewee. The authors argue that when psychological distance is present between interviewers and interviewees, it can limit the ability of researchers to collect complete information. Secondly, respondents have to answer the call and can disconnect at any time, and their behavior and body language cannot be observed. Thirdly, interviewers cannot use visual aids to assist in the interviewing. Lastly, network and reception problems may arise especially in developing countries. To overcome these challenges, this researcher aligns with Lipschultz (2010) who suggests that the interviewer must:

- Start with pleasant greetings and show enthusiasm with a cheerful tone even though handshake and smile may not be visible as in the case of a face-to-face interview.

- Keep a constant conversational tone. The interviewer should maintain a friendly tone throughout the process. Conversation must not start warm and fade along the line.
- Be a good listener. Constantly asking respondents to repeat answers can be annoying or boring. Questions must be asked carefully and clearly to elicit the required responses.
- Be prepared to allow questions from the respondents. Allowing good questions can help raise the respondent's interest in the subject matter and make the entire process more interactive.
- Eliminate distractions and make sure the respondent is in a convenient, comfortable, and quiet place where there will not be background noise or disruptions.
- Ensure both interviewer and respondent are in isolated places to avoid eavesdropping and violation of confidentiality.
- Wrap interview up on a good note. Inform respondents that you are looking forward to meeting them in person. Also, have time to thank them for their participation.

4.7.1.2 Research Instrument

The interview guide for this study made allowance for open-ended questions to create the opportunity for the interviewer to obtain more information on responses, and to also allow for questions and queries on the part of the participants. Questions included in the interview guide are designed in line with the World Bank evaluation criteria for national pension practices. These criteria (see section 3.3.4.6 and Appendix A) informed the main themes for research discussions. The researcher tried to ask follow-up and probing questions whenever necessary to encourage participants to elaborate on or clarify responses. The recordings were transcribed soon after each interview session.

4.7.1.3 Recruitment and Participants' Selection

The determination and selection of participants for qualitative interviews need to follow standard criteria. The researcher must consider techniques that will yield an adequate sample size during the process of research design to ensure robust analysis for a credible research outcome (Seidman, 2015). The selection of participants for in-depth interviews is important because it determines the robustness of data to provide a better understanding and new ways of addressing the issues at hand (Patton, 2015).

According to Alsaawi (2014), deliberate and self-selection of participants may be better for in-depth interviews than using simple random selection because the research process may be hampered if the prior consent of participants are not obtained before the interview. Moreover, the generalization of results may not be the main aim of qualitative research. According to Saunders and Townsend (2016), a detailed description of participants should include the number selected and their characteristics to ensure transparency, representativeness, and enhance the richness of the enquiry.

Saunders and Townsend (2016) opine that participants from a homogeneous population[2] must be selected with expert knowledge to achieve the requisite level of adequacy and point of saturation during qualitative interviews. According to Francis, Johnston, Robertson, Glidewell, Entwistle, Eccles, and Grimshaw (2010), an adequate level of saturation and sufficiency is attained if the interviews involve a homogenous population of 6 to 12 participants with expert knowledge. Furthermore, Saunders (2012) suggests that a range of 4 to 12 participants from a homogenous population provides saturation and sufficiency of data collection during qualitative interviews.

[2] If populations are homogeneous they are said to be identical, and by extension, the sample data are also said to be homogeneous. Homogeneous populations have similar traits such as knowledge, skill, experience, location, and employment.

However, Creswell (2007) suggests a sample size of 12 to 30 for interviews involving a heterogeneous population. This study selects respondents from a homogeneous population of pension fund managers and regulators who have expert knowledge of the topic under investigation and whose responses provide first-hand information to assist to achieve the intended research goals.

Ten pension fund managers are identified for interviews for this study. This number is aligned with perspectives outlined by researchers such as Saunders (2012), Saunders and Townsend (2016), and Francis et al (2010). More so, the number is considered appropriate because the information required from this group of respondents is similar in nature and many variations in response are not expected. In addition, the method is supplemented by a review of relevant documents published by pension institutions to enhance the robustness and to promote the credibility of the enquiry process. Furthermore, the pension institution that employs the respondents operates within a similar regulatory framework (the National Pensions Act 2008-Act. 766) that is supervised by the National Pensions Regulatory Authority (NPRA) in Ghana. Except for cases where personal opinions are required, the information should not differ much.

Interacting with pension fund managers through interviews assists the researcher to identify and solicit knowledge from these key informants[3] that may not be available otherwise. The ten managers are all selected from the state pension fund management institution (SSNIT) at the head office in Accra. For the sake of convenience and to take into account the COVID-19 pandemic situation, interviews were conducted by telephone on a one-on-one basis and on dates convenient to the participants with each session lasting between 35-45 minutes. The researcher took the following steps to recruit participants for the study.

[3]People who are particularly knowledgeable and articulate about the scope of the inquiry and whose insight can be helpful to assist the researcher to understand events and why those events occurred

4.7.1.4 Selection of Pension Fund Managers

First, the researcher requested the Public Affairs Manager of Social Security and National Insurance Trust (SSNIT) at the head office in Accra for a gatekeeper's letter which was presented to the University of South Africa (UNISA) ethics committee for clearance to conduct interviews. The UNISA ethical clearance certificate was then presented to the Public Affairs Manager of SSNIT (see appendix I). Telephone numbers of the managers including some deputies were obtained. The researcher contacted the pension fund managers individually by telephone for a formal introduction, the declaration of intention, and the exchange of email addresses. This was followed by a presentation of the UNISA ethical clearance certificate and issuance of an informed consent form through the respective email contacts of the proposed participants. Managers who were willing to participate and had consented to do so became the "study participants". Thereafter, interview dates and time was fixed.

The inclusion criteria for participation are as follows:

1. Only those who are pension fund managers or deputy managers are selected.
2. Only those who signed the consent form are included.
3. Individuals who revealed to be available for the interview.
4. Individuals who may have the time to complete the interview process.
5. Anyone who would not demand and insist on financial inducement before, during and after the interview.

The researcher asked permission from participants to audio-record the interview session to ensure accurate transcription. Handwritten notes were also taken during each interview. This allowed the researcher to keep track of key points or probe further on issues of particular interest. As protocol demands, the researcher reminded participants of the purpose of the study, as captured

in the preamble of the interview guide (see Appendix A). They were also informed of the research procedures, expected benefits and protection of confidentiality (see Appendix C). The researcher made allowance for questions from participants to remove any doubts or concerns about the research process. More information about the researcher was also duly provided to the participants (see Appendix C).

4.7.1.5 Selection of pensioners for interview

As a first step, the researcher contacted the Area Head (Reverend Minister) of the Church of Pentecost, Ghana at Madina municipality in Accra to express his intention to collect data from pensioners in the church, specifically the Madina central congregation. A gatekeeper's letter was obtained from the Minister and forwarded to the Research and Ethics Committee of UNISA. Later, the ethical clearance certificate obtained from UNISA (see appendix I) was presented to the Reverend Minister to confirm the authenticity of the study, and subsequently, telephone numbers of pensioners were obtained from the church's register. Thereafter, the researcher contacted the pensioners individually by telephone for a formal introduction, declaration of intention, and exchange of email addresses. This was followed by the presentation of the UNISA ethical clearance certificate and the issuance of an informed consent form through the prospective participants' respective email contacts. The researcher then selected ten (10) pensioners who agreed to participate. Thence, the interview date and time were fixed.

The church was approached because as one of many COVID-19 safety protocol measures, religious groups in Ghana were required to keep a register that contains records of all church participants as outlined by the president of Ghana in the "14th National Address on COVID-19" on July 26, 2020. The Madina central congregation was chosen because the researcher's preliminary investigations revealed the existence of such records. The church's records showed 39 regular

member pensioners of which ten (10) were selected for telephonic interviews. As indicated earlier, this number is adequate to ensure satisfactory, sufficient, and saturated outcomes for a homogeneous population (Francis et al, 2010; Saunders & Townsend, 2016).

The inclusion criteria for participation or selection were similar to those described in section 4.7.1.3, and the instrument and structure of questions correspond with those discussed in section 4.7.1.4. To maintain focus and to also ensure interviews are productive, the moderator tried so far as possible to regulate the procedure to reduce delays to the barest minimum. The researcher again recorded the responses with the aid of notepads and a voice recorder. Transcription and analysis began after the interview process.

The in-depth interview method has been used widely in pension-related studies. Table 4.1 presents some examples of such studies.

Table 4.1: Examples of in-depth interview technique employed in pension-related studies

Institutions/Author(s)	Research focus
HelpAge International (2003)	Non-contribution pension and poverty prevention: A comparative study of Brazil and South Africa.
Lee (2010)	Data set on pension and health: Data collection and sharing for policy design.
Wood, Wintersgill and Baker (2012)	Pension landscape and charging: Quantitative and qualitative research with employers and pension providers.
OECD (2013)	Improving pension information and communication. OECD survey and lessons learnt.
Shaw and Waite (2015)	Exploring the pension 'X-factor' for generation Y men.
Oyemwinmina and Edomwonyi (2016)	The perception of the contributory pension scheme administration by the staff of University of Benin
Collins, Tooms-Smith, Camanaru, Fenton,Gloster, Silcock and Dodd (2019)	Planning and preparing for later life: A social survey feasibility study.
James, Prince and Buffel (2020)	Pensions and Benefits: How do people think about later life when making workplace pension savings decisions?

Source: Author (2020)

4.7.2 Document Review

As indicated earlier, an important component of this research is a comparative analysis of pension systems of three developing countries (see section 5.1) to identify limitations and positive aspects of their systems. The results of such an analysis may provide lessons that may be relevant for pensions in Ghana. To do this comparison effectively, the researcher relied on practical and relevant information documented on pension systems, implementation, challenges, and successes in each of these countries. Bretschneider (2017) indicates that document review gives more insight into the research questions and enables the researcher to highlight more on the topic under discussion. In other words, the researcher treats these documents similarly to a respondent or informant that provides the researcher with relevant information (O'Leary, 2014). This method is often used in addition to other qualitative techniques to draw on multiple sources of evidence (triangulation) to enhance data credibility. Analysing documents entail categorising contents into themes similar to how focus groups or interview transcripts are analysed (Bowen, 2009a). The process involves attentive and careful sorting of data by the researcher with much focus on re-reading and a thorough review of the data for categorization according to its characteristics. Relevant themes may emerge as a result.

The study draws on pension literature for selected cases (see section 1.8) published in academic journals and manuals, individual papers, institutional records, website documents, and researcher-generated documents such as field notes. This study employed document review for reasons that conform to Bowen (2009a) which states that:

- Document analysis can be applied to many fields of research as a compliment to other methods.

- Obtaining and analysing documents is often far more time and cost efficient than conducting surveys or experiments
- Documents provide stable data sources, which can be verified at any point in time if the documents are accessible.
- Documents provide the researcher with supplementary research data, making analysis more useful and beneficial.
- Some documents contain historical data that can no longer be verified but still provide details that may help identify and track changes and new developments in the field of study.
- Finally, making use of document analysis can ensure that the research is covering the topics investigated comprehensively.

It is worthy to note that many researchers draw on this qualitative research strategy in their quest to find answers to pension related problems. Some examples are illustrated in Table 4.2

Table 4.2: Examples of document review research strategy employed in pension-related studies

Institutions/Author(s)	**Research focus**
Barr and Diamond (2009).	Reforming pensions: Principles, analytical errors and policy directions.
Vickerstaff, Macvarish ,Taylor-Gooby, Loretto and Harrison (2012)	Trust and confidence in pensions: A literature Review.
International Organization of Pension Supervisors (IOPS, 2014)	Stress testing and scenario analysis of pension plans.
Westerman and Mpinga (2017).	Public pension fund structure and mechanisms: A case study of the Tanzanian pension fund system.
World Economic Forum (2017).	Case Studies in Retirement System Reform
Paklina (2018).	Impact of digitalization of financial services on pension supervisory practices: Case Studies.
Stańko (2019).	Design and supervision of pension projections in 26 jurisdictions.

Source: Author (2020)

A specific document may be deficient to provide the required amount of relevant, accurate, consistent and complete data. As a result, the researcher made use of a wide variety of documents but focused more on the quality of documents than the quantity. Attention was therefore mainly given to documents and data that addressed the research questions.

4.8 Data Analysis

The procedure for qualitative data analysis moves the researcher to understand, explain and interpret the situations under investigation (Denscombe, 2010). Denscombe (2010) posits that for any qualitative data analysis to produce efficient outcomes, then, the following steps apply. First, data must be as concise as possible. Data in this form enables the researcher to understand which aspects are more relevant for comparison and interpretation. Second, the researcher must ensure that the relationship between the research objectives and the summary of findings is clear. This is especially important when the objectives of the qualitative study are the focus of the research.

In this study, each research question constituted a theme upon which analysis and discussions were based. The thematic method enabled the researcher to determine themes or patterns after transcribing interviews and extensive document reviews. The analysis in this study relied on the World Bank's pension systems evaluation criteria.

4.8.1 Thematic Analysis

According to Braun and Clarke (2012), thematic analysis is a type of qualitative analysis used to identify, classify, analyse, and report data by themes or patterns. This method of analysis is adopted in this study. It gives the researcher an insightful analysis that answers particular research questions (Braun & Clarke, 2006). This method provides scope to illustrate the data in more detail and enables the researcher to deal with diverse subjects. Thematic Analysis is most appropriate for a study that seeks to discover through interpretations (Marks & Yardley, 2004). Developing a theme

is to capture the main ideas about the data concerning the research questions. Themes represent responses that follow some pattern identified within the data set (Braun & Clarke, 2006). Data obtained from this study are transcribed and segregated into themes based on the research questions.

4.9 Criteria to ensure trustworthiness of the research

The term "trustworthiness" is used as evaluative criteria to strengthen the quality and integrity of qualitative research. The criteria provide guidance to determine whether a qualitative study is trustworthy, sufficiently rigorous, insightful, or valid (Elo, Kaariainen & Kanste, 2014). The trustworthiness of a qualitative inquiry is to ensure that the findings are worthy and deserve attention. The Lincoln and Guba (1985) framework of quality criteria usually referred to as the "gold standard" for qualitative research are adopted in this research. Despite criticisms (see section 4.9.6), the criteria are widely used in qualitative research. Lincoln and Guba (1985) suggested four criteria to follow to promote the trustworthiness of a qualitative inquiry. They are credibility, dependability, conformability, and transferability which are each discussed next.

4.9.1 Credibility

The credibility of a qualitative research requires that confidence can be placed in the data and its interpretations (Korstjens & Moser, 2018). The credibility of this type of research can be ensured by employing the following techniques:

Data triangulation- This refers to the use of multiple data sources to validate conclusions. It helps to overcome biases that may arise from a single-source-data. Different data collection methods (see previous sections) were used in this study to ensure the credibility of findings.

Member checks- Member checks are employed to ensure that data is shared with participants for their evaluation of correctness. Participants may suggest changes if their views are not captured

or misreported (Schwandt, Lincoln & Guba, 2007). In this study, the researcher crosschecked data with respondents.

Peer review- Peer review involves subjecting the author's scholarly work and research to the scrutiny of other experts in the same field to check its validity and evaluate its suitability for publication. The aim is to encourage authors to meet the accepted standards of their discipline and to control research data to ensure that claims, interpretations or personal views are not published without prior expert review (Kelly, Sadeghieh & Adeli, 2014). This study is done under supervision and is also subject to external examination. The author also consulted other researchers who have in-depth experience of qualitative research.

4.9.2 Dependability

According to Johnson and Rasulova (2016), dependability answers the question "Can the research findings be repeated if the enquiry is replicated in the same or similar context with the same or similar units?" Dependability simply refers to stability or reliability of study findings over time. To increase dependability, the researcher provided an ***audit trail*** (tracking and confirming data with the source) by keeping track and accounting for all the research decisions and activities (see appendix G) ranging from the design of instrument to report writing which is consistent with (Bowen, 2009b).

4.9.3 Conformability

Conformability is the confirmation that data and interpretations of the findings are not the investigator's own invention or imagination, and that; findings are based on information obtained from field work (Johnson & Rasulova, 2016). Conformability was enhanced by using member checks (see section 4.9.1) to confirm that the data obtained was objectively captured.

4.9.4 Transferability

Transferability refers to the degree to which the results of qualitative research can be applied to other respondents in a similar context. For the purposes of this study, the researcher made use of ***rich, thick description*** (Merriam, 2002), which is a clear robust description of the research process that helps other researchers to replicate the study with similar conditions in other settings (Johnson & Rasulova, 2016). Put differently, the technique provides descriptive data that readers can evaluate and apply to other contexts.

4.9.5 Authenticity

Lincoln and Guba (1994) added the fifth criterion of "Authenticity" to counter criticisms against their previous quality criteria (see section 4.9.6). Authenticity refers to reporting the true feeling of respondents as expressed during the data collection process and depicting the real issues for possible action (Saumure & Given, 2008). To make sure that this study complies with the criterion of authenticity, the researcher follows the requirements mentioned below.

- Ensures that questions were phrased carefully and reviewed by a knowledgeable authority and the supervisor.
- Makes allowance for adequate time to collect the data to avoid rushing respondents through interview sessions.
- Provides supplementary sources of information such as field notes and audio recording devices to cross-check results.
- Makes critical self-reflections to prevent biases as far as possible that may affect the research findings.

4.9.6 Criticism of Lincoln and Guba's framework of quality criteria

Johnson and Rasulova (2016) argued that Lincoln and Guba (1985) fail to recognize moral and ethical standards when evaluating the quality of qualitative research. According to Johnson and Rasulova (2016, 12), *"This moral and ethical argument is paramount since qualitative research is based on relationships which emerge between the researcher and data, the researcher and research participants, data and research participants and the wider circle of readers*". The authors argue that trustworthiness needs to be judged against how ethically the qualitative study is done in relation to research participants, other stakeholders and the scientific community at large. To counter this criticism, Lincoln and Guba (1994) added the fifth criterion of authenticity (discussed earlier in section 4.9.5) to strengthen the evaluative criteria of qualitative research.

Another argument advanced by Johnson and Rasulova (2016) is that the positivists view is important to argue for absolute trustworthiness. This is based on the belief that "truth" is not static but valid for a certain time and a certain context. Therefore, it is suggested by the trustworthiness criterion that detailed information be provided to the readers about the enquiry process and the phenomenon before, during and after the inquiry (ibid).

4.10 Conclusion

A qualitative research approach is adopted in this study to enable an in-depth exploration, description, and interpretation of the subject matter under consideration. The philosophical framework within which this study was located is pragmatism. The study adopted pragmatism because of its flexibility, the nature of the inquiry, motivation, methodology, and expected results. The researcher employed an exploratory research design throughout the inquiry process with the help of primary and secondary data sources. The study applied telephonic interviews and reviewed relevant documents from many institutions. The reason was to improve the credibility of the

research and make a meaningful comparison with selected countries. The engagement of these instruments followed scientific procedures to allow for a trustworthy inquiry report. Finally, the study adopted a thematic method of analysis which reported and separated data into themes or patterns to produce an insightful analysis that answered particular research questions.

CHAPTER FIVE

A COMPARATIVE ANALYSIS OF PENSION SYSTEMS

5.1 Background

This chapter of the study is devoted to a country analysis of pension systems and reforms. For the sake of clarity and succinct comprehension of issues on a country basis, the analysis of each of the three selected countries; Chile, Mauritius, and Singapore are presented in a separate section. Section 5.2 focuses on the analysis of the pension systems in Chile, while sections 5.3 and 5.4 represent Mauritius and Singapore respectively. This enables the researcher to easily compare the achievements and constraints of the pension systems of these countries to Ghana. The analysis presents the evolution of the pension systems of these countries and an assessment of the current systems against the pension evaluation criteria of the World Bank. As mentioned in section 4.4, the three countries for the comparative analysis are selected on the basis of:

- Assistance received from the World Bank pension reform programmes which is comprehensive and is used as a measuring standard for this research.
- Availability of adequate information and data on which analysis is based.
- Exemplary achievements with regards to pension system reforms.
- Belonging to separate geographical regions for a sound analysis.
- Belonging to developing countries (World Economic Situation and Prospects, 2012), but vary in terms of per capita GNI. Whereas Chile and Singapore are classified as high-income economies, Mauritius is an upper-middle income country, and Ghana a lower-middle income nation (World Economic Situation and Prospects, 2014). The income and pension system transformation of these successful nations leave many lessons for Ghana and other developing countries.

Furthermore, Chile 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. The country's pension reforms have been regarded as formidable and successful and often cited as such by researchers as Soto (2005) and Obiri-Yeboah and Obiri-Yeboah (2014). In 2019, Chile's pension system was rated grade B with Melbourne Mercer Global Pension Index range of 65-75. This indicates a pension system that has a sound structure with many good features but has some areas for improvement (Melbourne Mercer, 2019).

In addition, Mauritius demonstrates that a basic pension for all is not only theoretically desirable but affordable and politically feasible (Willmore, 2003). The country 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 and has the best pension system in Asia. According to the 2017 Melbourne Mercer global pension index, Singapore ranked the seventh-best pension system in the world, accumulating an overall index of 69.4. 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 to Ghana and other Sub-Saharan Africa countries. The details of the pension systems of the three countries are discussed in the following sections.

5.2 THE PENSION SYSTEM OF CHILE

5.2.1 Introduction

Chile is situated on the west coast of South America, bordering the South Pacific Ocean, between Argentina and Peru. The country gained independence from Spain in 1818 and had its first constitution in place in 1833. According to Gilmour (2013), Chile has experienced several constitutional crises through military coups. The regime of General Pinochet introduced major policy changes, inter alia the privatization of pensions. The last major constitutional review was in 2005 which established the reduction of military influence in the political process, and introduced a four-year non-renewable term of presidency. The current president Sebastian Pinera won the Chilean general election in 2018. He succeeded Michelle Bachelet the first Chilean female president.

According to World Factbook (2020), Chile is in the advanced stages of demographic transition and is becoming an aging society. The total population in mid-year 2020 was estimated at 19,116,201 people, compared to only 6,143,000 in 1950 (World Population Prospect, 2019). The proportion of children below the age of 15 in 2015 was 20.1 percent, 69.0 percent of the population was between 15 and 64 years of age, while 10.9 percent was 65 years or older. The aged population (those 65 years and older) rose to 16 percent in 2017 and it is estimated to hit 30.6 percent by 2050 (World Population Prospect, 2019). According to World Factbook (2020), Chile's life expectancy is on par with developed countries. The country has been experiencing rising life expectancy at birth due to improved health care and a low mortality rate. The figure rose from 53.54 in 1950 to 62.01 in 1970, 73.30 in 1990, and 78.63 in 2010. The 2020 estimated figure is 80.27.

This rising trend of the aged population has implications for Chile's old age income security. This section focuses on the structure of Chile's pension system, reforms, and the policies in place to deal with the retirement needs of the aged.

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 mandatory system that allows all employees to contribute a part of their income into a pension account managed by a "fund manager" which is either state-owned or a private firm. The institutions that manage the Chilean pension funds are known as the Administradoras de Fondos de Pensiones, in English called the Pension Fund Administrators (AFPs).

5.2.2 The evolution of the pension system in Chile

Chile introduced a mandatory pension system for public sector workers in 1924 (Schmidt-Hebbel, 1999). Originally, it was designed as a PAYG pension scheme but this could not be sustained as pension reserves were depleted over the years. According to Rodrigo and Augusto (2001), the main causes of the financial depletion could be attributed to:

- The handling of financial resources without circumspection. For example, loans were granted and houses were built for selected members of the scheme without safeguarding the real value of the capital invested.
- Low investment returns and the use of pension reserves to finance other sectors of the economy such as the health sector.
- High contribution rates leading to evasion.
- Individual contributions that had little correlation with anticipated pension benefits.

- Many differences in benefit levels and requirements that had to be met to obtain the benefits. For instance, contributors to some of the major fund managers were not guaranteed their pension because one had to be employed when applying for retirement benefits. This meant that a person who was unemployed prior to retirement did not qualify for a pension even though he had contributed for most of his/her working life an unfair situation calling for reform.
- Restrictive affiliation. Membership was tied to the economic sector in which one was employed which did not encourage competition among sector fund managers and administrators and hampered efficient performance.
- Lack of automatic mechanisms to index pensions to inflation, leading to erosion of benefit values.

Due to the challenges that plagued the original pension system, there was a need for pension reforms, which are discussed in the next sections.

5.2.3 Chile's pension reform in 1952

Schmidt-Hebbel (1999) states that there was a significant pension reform in 1952 because of the inefficiencies of the pension system. The reform involved the separation of health demands from pension programmes, a sharp rise in contribution rates, and the adoption of new benefits computation formulas. This reform was unsuccessful in reducing the disparity in pension contributions and benefits disbursement because the inefficiencies in fund management reflected in high administrative costs and unattractive customer services. According to Ruiz-Tagle and Castro (1998), by 1973 the funding of the pension scheme became low, although 73 percent of all Chilean workers contributed to the scheme. This instigated another reform in 1980.

5.2.4 Pension reforms in 1980

According to the International Centre for Pension Management (ICPM, 2018), Chile's major pension system reforms occurred under Augusto Pinochet's regime in 1980. The free-market ideology put forward by the government produced a substantial transformation in the pension arena. ICPM (2018) further indicates that the old system was finally replaced with a compulsory, privately administered but state-supervised DC pension scheme.

As indicated earlier, the new management system is called "Administradoras de Fondos de Pensiones" (Pension Fund Administrators -AFPs[4]). Membership to the scheme became mandatory for all workers joining the workforce after December 1981, while those already employed could choose between either the previous PAYG system or the new system. The individual pension accounts are financed through a 10 percent mandatory contribution of monthly earnings by employees in the formal sector plus an additional contribution to cover administrative costs ranging from 0.77 to 1.45 percent. In addition, employers paid 1.53 percent of employee's salaries for disability and survivor insurance, but do not make any contribution towards employees' pensions. Workers were also allowed to make additional contributions besides the mandatory 10 percent into a separate fund which was either managed by AFPs or other financial institutions providing pension services.

The Chile pension system reform is regulated by Superintendence of Pension (SP), the institution responsible for the oversight control of the AFPs. The main functions of the regulator are to oversee the legal, administrative, and financial decisions of AFPs. The government's responsibility is to supervise the pension system through the SP. Some advantages of the AFP system are that contributions are linked to individual accounts and constitute a certain proportion of

[4]The AFPs are profit corporations that administer and invest the individual capitalization accounts and charge commissions for the administration of funds.

earned wage as specified by law. With this system, workers were also free to choose among different registered AFPs irrespective of the economic sector of their employment.

The AFP programme; offers pensions, disability benefits, survivor pensions, and a funeral grant if proof of funeral expenses of a deceased member is provided (Iglesias-Palau, 2009). The disability insurance covers all contributors who have not yet reached the pensionable age but are unemployed for a period of up to twelve months due to a non-work-related accident or illness. According to Iglesias-Palau (2009), AFPs are special types of companies which are performing multiple functions of insurance, record-keeping, and portfolio management of a pension scheme that differs completely from the responsibilities of mandatory pension fund management companies in other countries where they usually fulfill only a single role.

5.2.5 Challenges faced by the 1980 pension reforms

According to Rohter (2006), the two problems confronting the Chilean pension system are low coverage and high administrative cost. The author stated that many people were excluded from the pension system, and many contributors have realised that saving through pension funds is rather costly. It was also noted that many of those who started working when the system was first adopted were unable to contribute sufficient amounts to ensure an adequate pension due to an interrupted work history resulting from unemployment (Association of AFPs, 2015). Furthermore, the overhead cost deducted from contributors' salaries was too high and enriching pension funds managers at the expense of contributors (Bradley, 2016). With the 1980 pension system reforms, majority of Chilean workers were not able to contribute any additional amounts regularly to the fund due to the high administrative fees charged by the AFPs that take a chunk of contributors' savings and raised affordability concerns. Worse, many workers find it hard to fulfill the minimum

pension qualification requirement of contributing for at least 20 years. These problems, therefore, led to another reform in 2008.

5.2.6 Pension reforms in 2008

The 2008 Chilean pension system reform aligns with the World Bank's recommendations for pension systems that seek to address three core objectives of old-age income insurance, poverty relief, and consumption smoothing (Borzutzky & Hyde, 2017). One striking feature of this reform is that although the retirement age had been shifted from 60 to 65years for men and 55 to 60 years for women, workers were not obliged to retire at the new age requirement. In 2009, the regulator, Superintendence of Pensions, stated that the 2008 pension's reform was initiated to improve:

- the level and quality of coverage through the mandatory contributory and poverty-prevention pillars.
- competition, efficiency and optimize the risk-return ratio of the pension savings managed by the AFPs.
- the quality of benefits by solving issues of unfairness in granting disability and survivorship benefits.
- the level of participation, information and education with regards to pensions.
- the pension system's institutional structures.

The 2008 reforms consist of three pillars (ICPM, 2018) which are discussed in the following sections.

5.2.7 Pillar-One: Redistributive / Solidarity Pillar

Before 2008, the aged above 65 years and the disabled persons over 18 years old with little or no pension rights could apply for an "Assistance Pension" (PASIS) provided that their income falls below 50 percent of the minimum pension. Qualified individuals received an amount equal to 50 percent of the minimum pension, financed through the government budget. With the introduction of pillar-1 in the 2008 pension system reforms, two separate plans are designed for this category of people, which are:

- The Old-age Basic Solidarity Pension (PBS) for individuals without any pension
- Solidarity Pension Payments (APS) which is a supplementary income to individuals with a very low pension.

The PBS is available to individuals with no pension savings and who meet the requirements of at least 65 years of age, among the poorest 60 percent of the population, a minimum of 20 years of residency from the age of 20 years, resident for at least four out of five years before retirement and not entitled to any pensions. The PBS is a fixed amount and was USD$ 150 per month in December 2016. The amount is yearly adjusted to account for inflation. All individuals entitled to PBS also qualify for Survivor Pension benefit in case of death. This benefit is paid to the person paying for the funeral expenses (Fajnzylber, 2019).

The APS also aimed at reducing poverty among pensioners (Kritzer, 2008). The scheme provides additional funds to all individuals who have contributed to the mandatory pension system but have a low pension. The qualifying conditions to apply for this benefit are the same as conditions of a PBS (OECD, 2017). Furthermore, the individual's pension savings account must fall below the minimum allowable pension amount referred to as Maximum Welfare Pension (PMAS). APS beneficiaries receive the difference between PBS and 30.7 percent of PMAS multiply by the

amount of pension. The values of PBS and PMAS in 2018 were USD$ 162 and USD$ 478 respectively (ICPM, 2018).

The pillar-1 pension scheme also provides for women. For each child born alive or adopted, there is a state pension bonus granted to mothers (OECD, 2017). The calculation of the benefit begins from the day the child is born. The amount involve is 10 percent of 18 times the minimum wage in place at the time of birth of each child, plus investment returns on "fund C" of the pension fund system (see Table 5.1) from the date of birth until the benefit is claimed (OECD, 2017). Women are eligible for this bonus when they attain 65 years of age, have a minimum of 20 years of residency from the age of 20 years, and are a resident for at least four out of five years before retirement. This benefit applies to both biological and adoptive mothers in the case of adopted children (ICPM, 2018). However, linking child support bonuses to pension, in this case, raises concerns. Granted that the idea behind the fund is to support mothers and relieve them of some financial burdens; it raises the question of why this benefit should be delayed until a woman reaches the age to qualify for a pension? Child support is usually needed when children are small and should be separated from the pension system to achieve its goals. Perhaps the concern is that child support grants may serve as an incentive to have more children due to the aging population.

This pillar also makes provision for young workers between 18 to 25 years old. There exists a state-funded pension subsidy for this category of workers which is equivalent to 50 percent of the mandatory contribution calculated using the minimum monthly wage. This benefit is paid during the first 24 months of the contribution made by this target group and is intended to boost the individual capitalization account of young employees.

Lastly, it is worthy to note that beneficiaries of PBS or APS do not pay for health coverage.

5.2.8 Pillar-Two: Mandatory Contribution Pillar

The mandatory contribution pillar is a DC plan that requires a separate capitalization savings account for each member. Pension contributions are made by the employees (public and private) only and privately managed by AFPs. With this pillar, all formal and informal sector employees must contribute 10 percent of their salary into their individual savings account, but it is voluntary for self-employed and informal sector workers (OECD, 2017). In the Chilean pension system, employers are not mandated to make any contributions towards workers' retirement; they are only obliged to pay a disability and survivor insurance of 1.53 percent on employees' salary to the scheme. That implies that the system does not add much to labour costs. During parental leave, the 10 percent contribution is paid for by the AFPs under a scheme known as "parental leave benefit". In Chile, a woman is entitled to parental leave with pay for up to 18 weeks but after the 7th week of birth, she can opt to transfer some or all the remaining maternity leave to her husband. A husband is also entitled to 5 continuous days of paternity leave with pay after the delivery date of his wife.

According to ICPM (2018), workers pay an administrative fee ranging between 0.77 to 1.45 percent of their monthly salary. The AFPs use the additional fees to finance their operational costs (see Figure 5.1). The AFPs charged 1.27 percent to finance wage costs and 0.45 percent for assets under management (AUM). Contribution to this pension pillar is voluntary for self-employed workers. Voluntary members are individuals without a salary who decide to contribute to the scheme. However, salaried workers can make additional contributions into a separate fund which can be managed by the AFPs or by other eligible financial institutions providing pension services. Figure 5.1 below presents the flow of contributions from employees' gross wages under the mandatory second pillar.

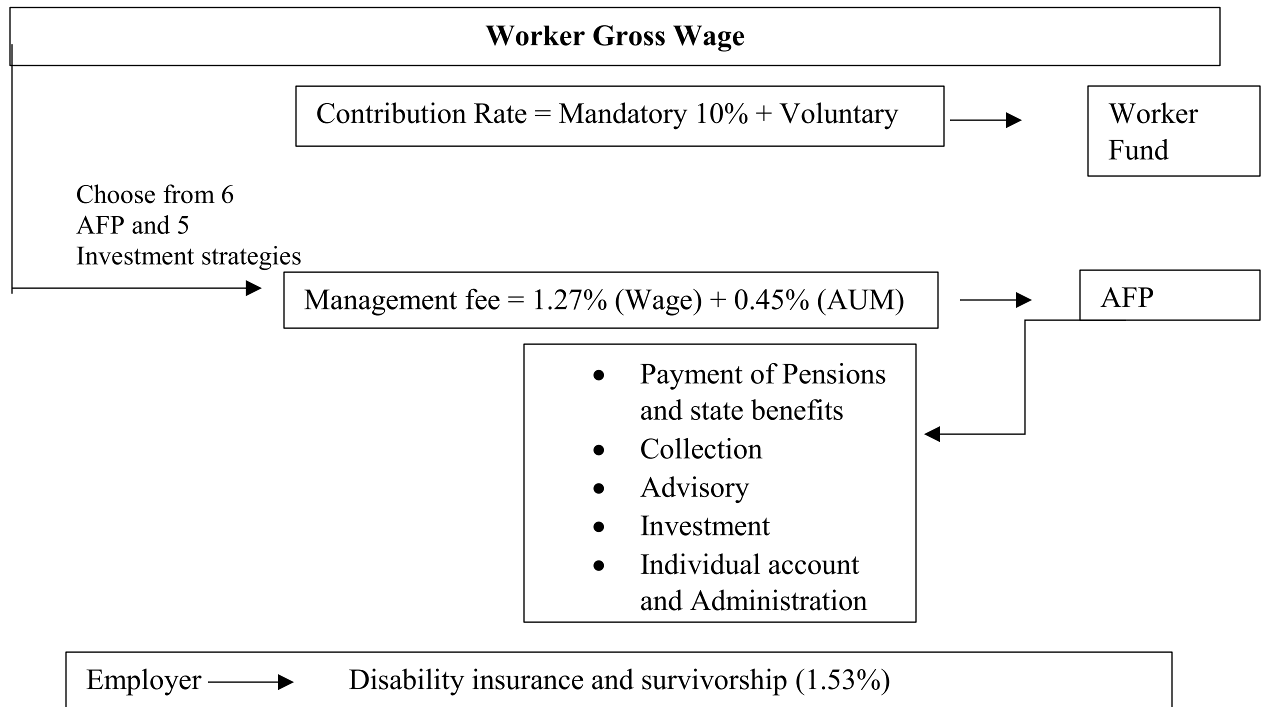

Figure 5.1: Pension Contributions, AFP's responsibilities and Administrative charges in Chile

Source: ICPM (2018)

In October 2018, Chile had six AFPs falling under the supervision of the Superintendence of Pensions. Their responsibility is to administer pension contributions to the maximum benefit of contributors. Each AFP is obligated to provide five investment strategies, that is called Fund A, B, C, D, and E. The multi-fund investment system offers contributors the opportunity to take greater risks in pursuing higher returns. Table 5.1summarizes the amount of risk of each Fund and the possible choice of Funds for the members.

Table 5.1: Possible choice of funds and risk levels in Chile's Pillar-Two pension contribution

Funds: Risk	Percentage of Equity	Men ≤ 55 years Women ≤ 50 years	Men> 56 years Women > 51 years	Default choice
Fund A: Most Risky	40%-80%	√		
Fund B: Risky	25%-60%	√	√	Men ≤ 35 years Women ≤ 35 years
Fund C: Intermediate	15%-40%	√	√	36 ≤ Men ≤55 years 36≤Women≤50 years
Fund D: Conservative	5%-20%	√	√	Men> 56 years Women > 51 years
Fund E: Most Conservative		√	√	

Source: ICPM (2018)

Fund A applies to mandatory accounts only. If members fail to choose any of the investment funds or do not actively contribute to their mandatory retirement account, they are assigned to a fund according to their age (see column 5 of Table 5.1). Members up to 35 years old are placed in Fund B while male members from 36 to 55 years old and female members from 36 to 50 years old are placed in Fund C. Male members over 56 years old, female members over 51 years old, and pensioners are placed in Fund D. Fund E consists of fixed instruments and has no percentage equity limits. However, once an individual chooses a Fund, he or she cannot go back to the default. Members can freely transfer their savings between Funds, but the Administrators may charge an exit fee if members transfer their balances more than twice during one calendar year. According to the OECD (2013), since the implementation of the Multi-funds system in September 2002, the outcome of the new investment scheme has overall been favourable as the five different investment portfolios on average have achieved positive returns. For instance, available records between 2002

and 2008 show an average rate of returns on Fund type A and B as 11.94 and 8.66 respectively, with the lowest being type E which recorded 3.22 percent in real terms (OECD, 2013).

5.2.9 Pillar-Three: Voluntary Saving Pillar

The third pillar under the current (2008) pension scheme makes provision for extra savings. The pillar consists of three different types of voluntary saving plans namely: Voluntary Pension Saving, Collective Voluntary Pension Savings, and Voluntary Savings Accounts. The details are discussed in the following sections.

5.2.9.1 Voluntary Pension Saving

Members of an AFP can voluntarily contribute a higher percentage of their wage than the mandatory 10 percent required for an individual's capitalization account. Both formal and informal workers can make such a contribution. For this voluntary contribution, an additional monthly contribution up to UF[5] 50 (US$ 1,796.93) is allowed and exempted from tax and can be withdrawn at any time by paying a fee that ranges from 3 to 5 percent of withdrawals. This fee on early withdrawals (before retirement) is to discourage individuals from withdrawing their pension savings and is to serve as an augment to their pension benefits. However, for low-income earners who are tax exempt, there exists an additional tax benefit that eliminates any tax payments on withdrawals from the voluntary savings. The voluntary contributions are however not considered when the entitlement to the Solidarity Pension payments (APS) is calculated. This raises the question of why it is not considered as it adds to a contributor's stock of wealth. A possible explanation is that the wages of APS beneficiaries may be so low that they still belong to the poorest 60 percent of the population and qualify for the relief package of APS.

[5] The Unidad de Fomento (UF) is a unit of account used in Chile.

5.2.9.2 Collective Voluntary Pension Savings

Collective Voluntary Pension Savings (APVC) is a plan introduced on October 1, 2008 as part of the pension reforms. This is a collective plan established by means of a contract between an employer and an authorized financial institution (OECD, 2011). All employees of the employer can contribute to this plan under equal terms and conditions. Both the employee and the employer make contributions to the APVC plan according to the conditions established by contract. According to OECD (2011), the contributions from the employer become the employee's property when the following conditions are met:

- The employer requires a specified minimum period of continuous service with the company by the employee to qualify for this share of the contributions. The conditions may differ from company to company.
- The contract requires that a minimum of at least 30 percent of all company workers must subscribe for the entire period of the contract and that the employer has 12 months to fulfill the minimum percentage requirement condition. The administrative fees of these APCV contracts are negotiated between the employee and the Administrator.
- Every worker of the employer may join one or more APVC contracts.
- The employer must indicate the appropriate APVC plan for his company, the appropriate plan for each employee and the mechanism to monitor contributions made into the plan by both the employee and the employer (OECD, 2011).

5.2.9.3 Voluntary Savings Accounts

Voluntary savings accounts are also known as a Second Pension Account, and it complements the individual's capitalization account, which is independent of all other accounts managed by the AFP. Early withdrawals from these accounts are subject to income tax deductions similar to the case with

the Voluntary Pension Saving. With this plan, contributions are made into savings accounts that are approved by the government. Such accounts include savings products offered by insurance companies, savings managed by AFPs, and mutual funds offered by banks. The introduction of these institutions compelled the AFPs to reduce their high administrative fees (Shelton, 2012). Contributors also have the option to transfer their voluntary savings into their capitalization account. Employers are also given tax incentives to promote employer-sponsored voluntary pension plans (Shelton, 2012). Table 5.2 summarises the Chilean three-pillar pension system.

Table 5.2: Summary of the Chilean Multi-Pillar pension system

Pillar	**Objective**	**Form**	**Target groups**	**Funding**
A Non-contributory First pillar	Elderly poverty protection and consumption smoothing through minimum pension	Publicly-funded as PBS (No pension plus poorest 60% of the population) and APS (pension savings lower than PMAS)	Life time poor, informal and formal sector workers	State/Tax-financed
A Mandatory Second pillar	Elderly poverty protection and consumption smoothing	Privately-managed by AFPs and financed on a fully-funded basis. i.e. 10% of worker's gross salary plus AFP charge of 0.77%-1.45% on worker's salary)	Formal and informal sector workers plus self-employed	Fully funded by individual/Employer contribution
A Voluntary Third pillar	Consumption smoothing	Voluntary contributions to AFPs or other private institutions. 3 Forms: 1. Voluntary Pension Savings. 2. Collective Voluntary Pension Savings 3. Voluntary Savings Account	Life time poor, informal and formal sector	Fully funded by individual

Source: Author (2020)

5.2.10 Special Pension Institutions outside the AFPs

Another pension institution that exists alongside the AFP is the Instituto de Normalización Previsional (INP). The INP is a merger of more than thirty institutions that managed public pensions before the AFPs. Presently, they still manage pension programmes of workers who decided not to join the AFPs (Iglesias-Palau, 2009). They are responsible for the calculation and transfer of contributions of members who migrated to the AFP management system. The INP also manages other social security programmes, including health contributions from workers belonging to the public health system and the management of work accident benefits.

Paradoxically, the Chilean military regime that implemented the new AFP system excluded itself mainly due to personal and political reasons. They rather spuriously argued that private companies should not handle information about military retirement conditions since military life supposedly has different requirements, particularly concerning survivorship and disability (Shelton, 2012). The National Defense Social Security Fund and the General Department of Social Security for the Police Force are responsible for the administration of the social security for the Armed Forces and the Police Force respectively. The pension system of the Armed Forces and the Police is financed by the central government budget (Rodrigo & Augusto, 2001), which is a large benefit to the military.

5.2.11 Some weaknesses of the Chilean pension system

Regardless of the objectives of the 2008 Chilean pension reform, there are passionate calls for further reforms. In view of this, President Michelle Bachelet in 2015 set up a Presidential Advisory Commission on Pension System to identify the problems. The following are some findings of the commission:

- The 10 percent contribution rate of taxable income into the pension fund was relatively low compared to the rates of the previous PAYG system and what is done in other countries. For example, in Argentina and Peru corresponding rates were 17 and 13 percent respectively, while for the old Chilean PAYG system the average contribution rate was 20.6 percent of taxable income.
- Evasion and avoidance occur during the active working life of contributors, especially for low income individuals, which limits the accumulation of funds for old age.
- The income replacement ratio for Chile was below international standards. The Advisory Commission stated that the replacement ratio for OECD member countries was 66 percent for men and 65 percent for women with a history of regular contributions. Chile, however, was below that average with 48 percent for men and 37 percent for women (Bachelet Advisory Commisson, 2015)
- There is widespread discontent about low pensions. According to the commission's report, 70 percent of the citizens were of the view that the pensions are inadequate to maintain a moderate living standard.
- Another issue affecting the adequacy of the Chilean pension system is its aging population. Life expectancy in Chile had risen from 68.61 years in 1980 to 80.12 years in 2019 (Global Metrics, 2020). This means that accumulated savings from the working life of contributors must be distributed over more years during retirement while also taking care of dependency and vulnerability that come with aging.
- The system currently uses sex-specific mortality tables to price system benefits, and women can access their AFP accounts at age 60 whereas men can only do so at age 65 years (Association of AFPs, 2015).

5.2.12 Coverage of the pension system

According to the Association of AFPs (2015), the total workforce in Chile in June 2015 was 8.5 million workers consisting of 59 percent males and 41 percent females. More than 93 percent of employees in the formal sector were listed on the pension system, whereas only 7.7 percent of the self-employed were listed (Association of AFPs, 2015). The AFP has 9.9 million affiliates on their system, which is higher than the total workforce of the country, an indication that some older workers may still be participating in the labour market or possibly due to double-counting of individuals who belong to more than one AFP. The national pension coverage[6] was 71 percent while 58 percent of the contributors to the AFP system were men and 42 percent were women. Women mostly engage in jobs that are informal that limits their scope for participation. Furthermore, they also perform seasonal work making them prone to periods of unemployment. Female participation in the formal labor market has however grown from 29 percent in 1986 to 42 percent in 2015 (Association of AFPs, 2015).

5.2.13 Assessment of the 2008 Chilean pension system

In this section the Chilean pension system is assessed with the aid of the World Bank's pension system evaluation criteria (see section 3.3.4.6). According to the World Bank, pension systems should address the following three core objectives: old-age income insurance, poverty relief and consumption smoothing (Borzutzky & Hyde, 2017). These objectives of pension systems are achievable when the scheme is financially sustainable, pay adequate pensions, and are robust to economic and demographic shocks and affordable. Some of these objectives relating to the Chilean system are discussed in the following sections.

[6] The percentage of contributors over the total number of the employed workforce

5.2.13.1 Sustainability

A pressure group called "No mas AFP" has been one of the advocates for a change in the current privatized Chilean pension system (Bond, 2016). They argue that the current privatized system is very expensive and enables AFPs to make huge profits at the expense of contributors. The pension system is sustainable mainly because AFPs are paying low benefits. Those who oppose the privatized system believe that the present system forces workers to provide contributions to fund managers who make huge profits at the expense of contributors (Bond, 2016). They mainly based their arguments on the evidence gathered from the retirement experiences and predicaments of the first beneficiaries of the scheme.

During public protests against the Chilean pension system in March 2019, Karol Cariola (a lawyer), 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 his view, the current pension system is to the disadvantage of contributors and pensioners since employers are not mandated to contribute towards workers' retirement. They argue that the pension system is sustainable because of low pensions. To rectify this situation, they recommend a tripartite public system with a distribution model of finance among workers, employers, and the state, which could alleviate the pressure on both workers and retirees, while at the same time make the system sustainable.

5.2.13.2 Adequacy

So far, pension policies failed to provide adequate coverage to pensioners. As mentioned earlier, AFPs make huge profits but fail to distribute more benefits to pensioners (Bond, 2016). According to Bond (2016), the AFPs deliberately pay low pensions to maintain the sustainability of the system. 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 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), the Chile 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. In a presidential speech in April 2017, President Bachelet acknowledged that pensions are insufficient and need to be reconsidered.

According to the Center 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. According to ICPM (2018), in comparison with international standards, the 10 percent mandatory contribution in Chile is lower than the 15-20 percent contribution rates required to deliver a replacement rate of 60-80 percent. For example, Spain has a contribution rate of 28.30 percent that delivers a gross replacement rate of 72.3 percent, and in France; the total contribution rate is 25.4 percent with a replacement rate of 60.5 percent (OECD, 2017). The main objective of a pension system is to provide adequate income security during old age and this is undermined when pension benefit levels deteriorate and increase old-age poverty (Ortiz, Duran-Valverde, Urban & Wodsak, 2018).

Contrary to the findings of ICPM, OECD, and others, the association of AFPs (2015) estimated that the replacement rate in Chile's pension system is higher than what is perceived. They argued that the average replacement rate can be misleading because it includes the minimum pensions paid

under the redistributive Pillar-1 to people who did not make any pension contribution (PBS) or those who paid contributions below the minimum threshold (APS).

5.2.13.3 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 (only six) compared to the 1990s when there were twenty. Subsequently, this has resulted in a lack of competition with negative implications for fees and efficient management (Bradley, 2016). Obviously, the high administrative fees may serve as disincentives to those who earn a low income to participate. 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.

The Association of AFPs estimated that the industry's administrative fees are around 0.6 percent of the balance in the capitalized accounts of contributors. According to the association, this figure compares well with the commissions charged by local and international mutual funds (Bradley, 2016). Bradley (2016) opines that the 0.6 percent is still high. The author admits that the 2008 reforms have significantly reduced the fees but could still be improved.

5.2.13.4 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 (see section 5.2.7). In another study, Fajnzylber (2019) investigates the impact of the APS on the life quality and poverty alleviation of the elderly in Chile using both quantitative and qualitative methods. The findings are that 33.9 percent of the elderly received income from the APS. For 8.9 percent of the

elderly population, payment from the APS constituted their only source of income. The APS scheme guarantees all lower-income individuals a guaranteed basic pension regardless of their contribution history. The APS is gender-neutral, unlike the mandatory contributory Pillar where differentiated pensions are paid to men and women (Fajnzylber, 2019). The scheme also provides old age and disability subsidies financed by general taxes, and as a result, 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 besides 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).

5.2.13.5 Predictability

According to the Superintendence of Pensions (2009), one of the drivers of 2008 reforms in Chile was the optimization of the risk-return ratio of the pension savings managed by the AFPs. Benefit computation 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) or it may be split to buy an immediate life annuity and take a programmed withdrawal later. With the PW approach, the retiree keeps his asset with the AFP personal pension account. The fund

administrator later converts the invested fund into a monthly payout according to a formula[7] determined by the government taking into account mortality and interest rate. Any remaining 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. Even though this alternative has the advantage to protect the retiree against the capital market and mortality risks, the shortcoming is that the individual must surrender the total pension accumulated to the insurer who pays a monthly annuity to the pensioner till his death and in case of early death, no amount is paid to the next of kin. Only individuals who can finance a pension higher than the Basic Solidarity Pension may buy annuities. According to Mitchell and Ruiz (2009), retirees can opt for both programmed withdrawal (PW) and annuity payments, but most retirees select either the immediate annuity or the PW, perhaps combined with a deferred annuity.

Although annuitization is not mandatory in Chile, almost 60 percent of all retirees are taking annuities (Iglesias-Palau, 2009). The redistributive component of the 2008 reform has been indexed to the consumer price index.

5.2.13.6 Robustness

There is high level of uncertainty in DC pension systems as benefits depend on the rate of return earned (Ortiz et al, 2018). 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 workers who faced irregular, part-time or insecure works terminating contributions. The long-term effect will most

[7] The PW formula for an individual pension is Premium = 12*p*prem + EPV(UF15), where: Premium = retiree’s total accumulation; p = monthly pension, whose value is being ascertained by this formula; prem = EPV of pension that equals 1 UF monthly = (Nx/Dx – 11/24); Nx and Dx are standard actuarial factors that depend on mortality and interest rates; EPV (UF15) = expected present value of UF15, which is the necessary capital for the funeral benefit of Chilean UF15 that is included in all policies.

likely be old age poverty, dependence on the state funded Pillar 1, 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, individuals close to retirement were shielded from the effect of the financial downturn. The mandatory pillar of the Chile pension fund had equity exposure of 48 percent of total assets and it reported a negative performance of 16.4 percent (Impavido & Tower, 2009). However, one could argue that the Global Financial Crisis was an extreme occurrence and citizens must be educated to allay such mistrust. The COVID-19 pandemic, however, shows that uncertainty and disruption is always a possibility.

5.2.13.7 Labor market impact

According to Attanasio, Meghir, and Otero (2011), the introduction of the redistributive pillar in the 2008 Chilean pension reforms has resulted in a disincentive for some workers to contribute to the pension system. This is so because the pillar guaranteed low-income earners and individuals with no pension contribution history of some minimum pension and 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 65years by 0.5 percent and 0.2 percent respectively (Attanasio, Meghir & Otero, 2011). The Chilean 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.

The study of Corbo and Schmidt-Hebbel (2003) noted that pension reform contributed to total employment growth of up to 3.7 percent but with a higher impact (7.6 percent) for the formal sector

than the informal sector (1.3 percent). This assertion was corroborated by Araneda (2019), who 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 that further leads to the expansion of the corporations and economic growth that eventually creates jobs.

5.2.13.8 Contributions to savings mobilization and financial markets

One aspect of Chile's economy where the pension reform has impacted positively is the rise in national savings and economic growth. For instance, the private contributory scheme has been a major factor in the increase of savings. It was evident that between 1984 and 1997, the pension system contributed significantly to the nation's excellent average growth rate of 7 percent per annum. Investment increased, and inflation declined from 25 percent to below 10 percent within the same period (ARMC, 2004 cited in Mitchell & Ruiz, 2009).

The Chilean pension system had a very positive impact on Chile's capital market, and pension funds exceeded $170 billion or 70 percent of GDP in 2016 (Bradley, 2016). According to Araneda (2019), the pension contributions of workers enriched corporations and AFPs which in the long run improved national macroeconomic figures. Araneda (2019) analyzed how large companies mobilize capital from pension funds alongside the welfare of pensioners and contributors in Chile. Araneda (2019) indicates that profits from these investments have an insignificant impact on pensioners as mentioned earlier in section 5.2.13.2. The IMF (2018) projected a growth rate of 3.4 percent for the Chilean economy in 2019. The AFPs made a total profit of $ 133,445,000,000 in March 2019 that is an increase of 100.1 percent over the same period in 2018 (the Superintendence of Pensions, 2019). This performance should lead to higher pensions, but there is no evidence yet available to prove this.

5.2.14 Proposed Reforms

In an effort to address some of the problems identified by the Chilean pension system, the president of Chile, Sebastian Pinera tabled a draft Pension System Reform Bill in October 2018 in the Chilean Congress. The reforms propose to create a five pillar pension system to improve current and future pensions with special attention given to vulnerable groups, middle class individuals and women. Below is a summary of the proposed reforms.

First Pillar: The Solidarity Pillar will be strengthened by gradually increasing the benefits to current and future pensioners depending on their age. The PBS and the APS contribution will improve by 10 percent and 15 percent respectively in the first year.

Second Pillar: The mandatory contribution rate will be increased from 10 percent to 14 percent of remunerations and taxable income. The additional four percentage point increment will be financed by employers. This change, other things being equal, should lead to an increase in workers' pension by up to 40 percent.

Third Pillar: There will be additional contributions by the state for the middle class to enable them exceed a minimum benefit that will subsequently increase depending on the years of contribution of each worker.

Fourth Pillar: This pillar is to solve the imbalance in pension benefits between men and women. Women will have a greater share in the additional contribution to be made by government to compensate for their lower salaries and lower level of participation in the labor market.

Fifth Pillar: Additional contributions can be made by workers who voluntarily postpone their retirement. Workers who work for an extra five years stand to increase their pension by over 40 percent.

In addition to the pillars discussed above, other aspect of the proposed reform is to create a "Severe Dependency Insurance and Subsidy" for older adults. This insurance will take care of older adults suffering a severe dependency (physical or mental) challenge. The dependency insurance will be financed with an additional contribution of 0.2 percent by employers and a subsidy from the state. The draft bill also seeks to admit new pension administrators to increase competition which will eventually reduce administrative fees and increase efficiency.

It is important to note that the proposed Chilean pension system reforms differ from the pension recommendations of the World Bank. For example, the government's decision to top up pension contributions of the middle-class workers is at variance with the DC pension scheme recommended by the World Bank. According to the World Bank recommendations a mandatory DC pillar should have an individual savings account managed by a legalized private or independent body that invests these funds. Benefits of the investment are to be added to the individual's accumulated funds in the pension account. The aim according to the World Bank (2005a) is to enable workers to be responsible for their own pension and work hard to accumulate wealth towards their retirement (see section 3.3.4.5). Moreover, the World Bank has not recommended any smoothing of income differences between male and female pension contributors in a DC pension system. The introduction of these pillars may have adverse labour market implications as it could serve as a disincentive to work extra hours in the early years of employment. Workers may defer such extra hours of participation in the labour market to old age when the system provides better incentives.

5.2.15 Conclusion

In conclusion, it can be argued that the different pension reforms to the pension system in Chile have improved the lives of pensioners and pension contributors. However, each of the reforms has had shortcomings. Chile presently has a three-pillar pension system resulting from the pension reforms of 2008 based on the advice of the World Bank. The first pillar is made up of Old-age Basic Solidarity Pension (PBS) for individuals without any pension, and Solidarity Pension Payments (APS) which is a supplementary income to individuals with low pensions. The second pillar is a mandatory DC plan that requires own capitalization savings account for each member. Lastly, the third pillar is a voluntary savings plan designed to provide extra savings to contributors. This pillar consists of three different schemes namely; Voluntary Pension Saving, Collective Voluntary Pension Savings, and Voluntary Savings Accounts.

An assessment of the 2008 reforms revealed some loopholes in the system. There are problems of evasion and avoidance during the active working life of contributors, especially in the cases of people with low income, which limits their accumulation of funds for retirement. The income replacement ratio for Chile was also below international standards. The replacement ratio for OECD member countries was 66 percent for men and 65 percent for women who made regular contributions. However, in Chile, the replacement ratio is 48 percent for men and 37 percent for women which is mainly due to smaller contributions by only the employees (Bachelet Advisory Commission on the Pension System, 2015).

The foregoing shortfalls notwithstanding, researchers such as ICPM (2018) and Bradley (2016) think that the pension system in Chile is a well-designed and well-functioning system. Furthermore, the Chilean pension system has injected life into Chile’s capital market where pension funds in 2016 exceeded 70 percent of GDP. To address the challenges of the pension system, new reforms

are tabled in the form of a new Pension System Reform Bill (October 2018) which is yet to be approved. From the discussion of the Chilean pension system, it can be argued that it serves as a good example for other developing countries.

5.3 THE PENSION SYSTEM OF MAURITIUS

5.3.1 Introduction

Mauritius is an Indian Ocean island colonized by the Dutch in 1598, the French in 1715, and the British in 1810 (Meade, 1968). The country became an independent state from British rule and joined the commonwealth on March 12, 1968. After a period of political uncertainty, the country's constitution was amended and Mauritius became a republic on March 12, 1992. According to the Economist Intelligent Unit Democracy Index (2019), Mauritius is a parliamentary republic that held many elections since independence. The president and the vice president are elected by the National Assembly for five-year terms which are renewable with no term limits.

Mauritius's total population in 2019 was 1.265 million, a 30.95 percent increase over the 1980 figure of 966,000. However, the gradual population rise is projected to start showing a decline from 2030 due to a falling fertility rate (Republic of Mauritius, 2019). The fraction of those who are 65 years and above continues to rise from 5.9 percent of the total population in 1972 to 17.4 percent in 2019. Life expectancy in Mauritius increased from 63 years in 1969 to 74.4 years in 2018 and is growing at an annual average rate of 0.34 percent.

This section focuses on the pension system and reforms in Mauritius from the pre-colonial era to the present day. This section discusses how pensions in Mauritius evolved, challenges encountered, the components of the current pension system after the adoption of the World Bank's multi-pillar pension recommendations in 2005, and the achievements of the pension plans in reducing old-age poverty.

5.3.2 Dawn of the Mauritius Pension System

Mauritius is a country dominated by sugar production. Pre-colonial Mauritius did not have a formal pension system; as a result, the aged depended on their families for their survival. However, the colonial laws provided some income relief to orphans, the disabled and an extra allowance against injury for those working on the sugar cane plantations (Willmore, 2003). The sugar industry dominated every aspect of the economy and accounted for 98 percent of Mauritian exports. Most of the large sugar estates and the sugar mills were owned by the Franco-Mauritian elite settlers, whilst the majority of the farm labourers were Indo-Mauritian labour from India. According to Seekings (2011), most Indo-Mauritians were either very poorly paid workers in sugar factories or grew sugar cane on smallholdings, generally on less fertile land. These workers lacked housing and income securities for old-age.

The idea of a formal welfare state in Mauritius arose after the collapse of the limited welfare provisions allowed by colonial laws caused by the Great Depression in the 1930s in the global sugar industry that saw a drastic reduction in global sugar prices. This resulted in the creation of the Hooper Commission in 1937, which endorsed calls for formal institutionalisation of pensions for the aged. The Commission recommended a contributory pension scheme (Titmuss, Abel-Smith & Lynes, 1961).

Despite the recommendations of the Hooper commission, no well-defined pension scheme was introduced. The government rather resorted to a tax-financed, non-contributory old-age pensions system, which was means tested[8] (Meade, 1961). This programme aimed to raise the income level for the poor and excluded those who earned Rs 600 or more annually. It paid Rs12 per month to the

[8] 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.

aged 65years and above. This non-contributory pension scheme also catered for civil servants and employees of local authorities (Deerpalsing, 2004). According to Titmuss and Abel-Smith (1968), the strict means-testing created much resentment among workers. A major complaint was the bureaucratic abuse and 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 1958.

5.3.3 1958 Pension Reforms

Sen (1995) opined that information asymmetry is usually associated with means-testing because applicants communicate information to the government in "a system that rewards cheating and penalizes honesty". Citizens who reported their actual and correct earnings had their pensions reduced and vice versa. Consequently, in 1958, Mauritius reformed its pension system. The reforms abolished the means-tested scheme, lowered the eligibility age for women from 65 to 60 years, and introduced a universal pension scheme. According to Willmore (2003), the universal basic pension provides a non-contributory basic pension to all citizens (men and women) who are above the age of 60 years.

5.3.4 1976 Pension reforms

In 1976, a contributory pension scheme covering 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 to ensure at least moderate living standards for retirees (Willmore, 2001). The new contributory scheme was compulsory for all workers (public or private) who are 18 years or older (Deerpalsing, 2004). A total of 9 percent of salaries was contributed to the scheme with 6 percent coming from the employer and 3 percent from the worker. Contributions were valued in "pension points" that were revised periodically at the

discretion of the government. When an individual turns 60 years, the accumulated pension point is converted into a lifetime pension determined by government's computations. Benefits payable strictly depended on workers' contribution history.

Willmore (2003) observed that the contributory scheme was notional, which means that the determination of pension was at the discretion of the government whether contributions were invested or not. The self-employed and employees who earned low salaries were exempted from contributing to the scheme. This meant that not all public sector workers contributed to the scheme resulting in limited coverage. Also, some workers did not contribute regularly.

5.3.5 The Multi-pillar pension system in Mauritius

To address the challenges of the Mauritian pension system, the government adopted the World Bank's comprehensive review of pension systems in 2004. According to Stewart and Yermo (2009), the World Bank recommended that Mauritius:

- reduce fiscal risk by modernizing the Basic Retirement Pension
- render the pension system more equitable through higher transfers to the poor and also maximize returns for contributors.
- render the system more efficient by diversifying risk.
- improve transparency in management through introduction of regulation and a supervisory agency for pensions
- introduce flexibility in the system, especially regarding the retirement age.

The reform has realigned the Mauritian pension system into a four pillar system. Pillar-zero constitutes the Basic Retirement Pension (BRP) which is non-contributory. Pillar-one is the Civil Service Pensions Scheme (CSPS) and the National Pension Scheme (NPS). Pillar-two is the National Savings Fund (NSF) which is funded and linked to individual savings accounts. Lastly, the

third pillar constitutes a private voluntary scheme. Table 5.3 represent an overview of the multi-pillar pension system of Mauritius and this is followed by a detailed discussion of the pillars.

Table 5.3: 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: 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: World Bank (2005a)

5.3.5.1 Pillar-Zero: Basic Retirement Pension Scheme

The Pillar Zero of the Mauritius pension system consists of a universal non-contributory Basic Retirement Pension (BRP). The scheme is a nationwide cash transfer introduced by the government in 1951 and targeted at alleviating old-age poverty (Palacios & Whitehouse, 2006). It consists of an amount paid monthly by the government to all citizens 60 years and above. The amount received by citizens is not uniform but rather depends on the recipient’s age and is adjusted annually.

In compliance with the World Bank (2004) recommendation, the BRP has seen a major reform in December 2014. The reform varied the amounts paid to the elderly by introducing higher

pensions to the very old. Whereas pensioners below 75 years received Rs 174, those between 75-89 years and those above 90 years received Rs 200 and Rs 300 respectively for health care reasons. The reform included a re-introduction of a means-tested benefits scheme which is paid only to individuals who qualified as determined by the scheme. Poverty and affluence tests are two variants used in the means-test. The poverty test targeted people with incomes or wealth below a certain pre-determined level whilst the affluence test excluded people with income and assets above specified levels. Efficient administration was emphasized to keep costs low.

Apart from age, a recipient's eligibility is determined by a residency test. The beneficiary must be a national who has resided in Mauritius for at least 12 years after age 18. There is no residence requirement for those who are 70 years or older. Non-citizens who have resided in the country for at least 15 years since reaching the age of 40 are also eligible for the transfer. The BRP is unfunded and financed from the central government consolidated revenue through a grant to the National Pension Fund (NPF), which administers the programme and is supervised by the Ministry of Social Security and National Solidarity (Vittas, 2003). The number of beneficiaries keeps rising over the years. For example, the figure stood at 126,344 in 2006 and increased by 27.6 percent in December 2011. The total amount spent on BRP also increased from Rs 4,129.0 million to Rs 7,170.8 million in 2006 and 2011respectively (Mauritius Financial Services Commission, 2012). In 2015, BRP payments constituted 2.18 percent of GDP.

5.3.5.2 Pillar-One

Pillar-One is made up of two separate schemes; the Civil Service Pensions Scheme (CSPS) and the National Pension Scheme (NPS). These schemes are discussed next.

(a) The Civil Service Pensions Scheme

The Civil Service Pension Scheme in Mauritius is a DB scheme. The scheme runs on a PAYG basis. Participants contribute 6 percent of their earnings towards the scheme, and the government is responsible for any deficit. In 2018, the retirement age for workers has been increased to 65 years from the previous 60 years, and benefits are computed as 1/690th of pensionable earnings on retirement for every month of service subject to a maximum of 460/690th. This amount constitutes a maximum replacement rate of about 67 percent of final salary after a maximum of 400 months (33.3 years) of contribution (Soto, Thakoor & Petri, 2015). The benefits of this scheme are appropriately indexed to inflation and pension funds are invested in the State Insurance Company of Mauritius Limited. This scheme is generally regarded as generous (World Bank, 2004).

(b) The National Pension Scheme

The National Pension Scheme (NPS) began operation in 1978 as a mandatory contributory scheme for all employees of private sector firms except for those on very low wages and employees in the sugar industry as they remain covered under the BRP and the Sugar Industry Pension Funds respectively. The objective of this scheme is to provide a continuous income to workers outside the civil service (World Bank, 2004). All employees working for employers with more than 10 employees are mandated to join the scheme. The scheme is a DB plan that offers pensions to contributors by matching the number of "points" purchased during one's working life. Employers contribute 6 percent of the total basic salary of their employees while employees contribute 3 percent, making a total of 9 percent. The scheme ensures that pension incomes are indexed against inflation.

It is important to note that in the case of the NPS, although, a pension benefit is supposed to depend on the accumulated points and the declared value of points at the time of retirement, in

reality, the NPF adjusts[9] the value of the points to improve its sustainability and thus the true replacement rate is lower than expected. The current computation transforms every 11 contribution points into 1 retirement point. With a total contribution rate of 9 percent, this implies after 40 years of continuous contributions, the scheme pays a pension equal to one-third of an employee's pensionable salary base. Also, there is a maximum contribution limit, which further lowers the replacement rate for higher-income earners (Soto et al, 2015). By international comparison, the 33 percent replacement rate is low (60 percent for OECD countries), therefore Soto et al (2015) suggest that the contribution rate especially for private-sector workers, should be doubled to 18 percent to earn a replacement rate of 66 percent

In 2012, the total assets of the NPS amounted to 22 percent of GDP, and about 60 percent of the portfolio is invested in government bonds, 20 percent to foreign equity investments, and the rest in non-government corporate securities. Asset investment is not subject to legally imposed limits but is decided by an Investment Committee, comprising senior civil servants (Vittas, 2003). The total net assets of the NPS rose by 73.1 percent from 2006 to 2011. The administration of the NPS is done by the Ministry of Social Security and National Solidarity but the distribution of benefits and control of assets falls under the supervision of the Ministry of Finance. According to Soto et al (2015), although the NPS is privately funded, in a situation where the scheme is unable to meet its obligations due to market volatility, contingent liabilities would arise for the government. For this reason, it is advisable to diversify pension assets in non-government securities such as corporate securities and foreign equities for higher investment yields. This would require the creation of a more independent, transparent and professional fund governance and asset management structure.

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[9] 40 years of contributions *9 percent of wages * 1/11 value per point = 33 percent.

5.3.5.3 Pillar-Two: The National Savings Fund

Pillar-Two of Mauritius's pension system is called the National Savings Fund (NSF). It was set up in 1995 to replace the Employee Welfare Fund. The NSF is a DC plan that delivers to workers a lump sum payment on retirement which is determined by past contributions and the performance of invested funds subject to a "no-capital loss"[10] guarantee. The contribution rate amounts to 3.5 percent of covered earnings and is paid by employers monthly. All employees private or public are mandatorily required to participate in the NSF. However, workers who earn below a certain minimum level determined by the government do not participate and are therefore not covered. The NSF does not provide for the conversion of retirement accumulation into annuities. Furthermore, contributors and employers have no direct influence on the investment decisions of the fund. More than 75 percent of NSF assets are invested in government bonds and treasury bills (Soto et al, 2015). In 2012, the total assets of the NSF accounted for 4.6 percent of GDP. Soto et al (2015) proposed the merging of NSF and the NPS to simplify the pension system to achieve higher replacement rates. Such a merger could raise the contribution rates to NPS and decrease administrative costs.

5.3.5.4 Pillar-Three: Voluntary pensions

Mauritius has two types of voluntary pension schemes: an occupational and personal scheme. They are established by private companies to provide pensions for their employees. By August 1998, 914 companies had established such schemes (World Bank, 2004) and in 2014, this figure rose to over 1,000 (Mauritius Financial Services Commission, 2015).

[10] The beneficiary cannot receive a lump sum smaller than the amount of contributions paid into the account.

The occupational voluntary scheme is known as the Private Pension Scheme (PPS) and requires voluntary contributions from private-sector workers (aside from the mandatory NPS designed for the private sector) and is governed by the Mauritius Private Pension Scheme Act 2012. The voluntary contribution notwithstanding, the scheme is mainly a DB plan with varying monthly contribution rates by employees and employers depending on the company. While employees' contributions range between 5-10 percent those of employers' ranges between 10-20 percent. However, many companies are converting to DC schemes (Mauritius government, 2013). In the case of a DB scheme, at retirement, the member will receive a monthly pension predetermined by the company's formula, based on the employee's earnings and length of service. In the case of a DC scheme, at normal retirement age, the member will receive a monthly pension based on accumulated funds and investment returns. Depending on the company, the following options are also available to contributors:

- The member may choose to convert up to 25 percent of his pension to a lump sum. The monthly pension will then be reduced accordingly.
- The pension is payable for life but guaranteed for a period of 5 years. The member may choose any guarantee period beyond 5 years. In case of a pensioner's death during the first 5 years of pension payments, his or her next-of-kin will continue to receive the full pension until the end of the guaranteed period.
- The member can opt to receive a pension, which increases annually in line with a fixed percentage or with CPI.

Under this scheme, funds are managed by employers but regulated and supervised by the Mauritius Financial Services Commission (MFSC). The role of MFSC is to ensure that the objectives of a fair, safe, stable, and efficient private pension industry are maintained, to keep regulatory costs low, and

to preserve competitiveness in the pension sector (Mauritius government, 2013). Employers invest funds in corporate bonds, company shares, bank deposits, housing loans, loans to sponsors, and real estate. According to Vittas (2003), some of the private pension schemes tend to be paternalistic and extend funds for additional services such as housing loans to members at below-market rates, but the sponsoring employers will later compensate the pension funds for the lower rates.

Personal voluntary schemes on the other hand are Personal Pension Plans (PPP) that are accessible to almost every member of the workforce (employed and unemployed). The schemes are generally offered by insurance companies and contribution levels are laid down in the contract between the provider and the contributor. There are no legal maximum contribution levels. Contributions can be paid on a weekly or monthly basis, or as a one-off payment. Up to 25 percent of pension benefits can be paid as a lump sum, with the remaining assets being paid as annuities. The contributor may appoint a beneficiary, who can receive the benefits if the contributor dies.

5.3.6 Coverage

The non-contributory BRP cash transfer programme for the aged is to protect them from extreme poverty (Guven & Leite, 2016) (see section 5.3.5.1). 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 of this country must be kept in mind.

5.3.7 Challenges of the pension system

According to Guven and Leite (2016), challenges inherent in the BRP and the NPF 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 argue that limited information regarding contributions and benefits is a key challenge for the NPF. They 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.

Another challenge is that the private voluntary pension pillar is unregulated. Funds are managed by employers and their benefit preferences are unknown and may be risky to members.

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 major factors militating against the smooth performance of the NPS. It further indicates that although indexation formulas for the BRP and the NPS exist, they are not strictly followed to determine benefits. Mauritius, therefore, lacks the institutional capacity to effectively implement the rules of BRP and NPS to maintain and defend accountability of the schemes (World Bank, 2004). In 2003 for example, a financial scandal hits the NPS when a time deposit of MUR 500 million could not be traced by Mauritius Commercial Bank due to institutional lapses (Vittas, 2003). This requires that the internal audit and control systems and general supervision of the scheme are strengthened. In addition, the lack of regulatory protection for voluntary retirement schemes (PPS and PPP), the unfunded nature of the BRP, and the erosion of benefits to workers from the contributory pension plans (NPS and NSF) has become a threat to the country's economic stability and the living conditions of the aged.

5.3.8 Assessment of the Mauritius Pension System

This assessment is based on the eligibility criteria of the World Bank (2005a) for pension system evaluation. These criteria are discussed in the next sections.

5.3.8.1 Sustainability

A key challenge of the Mauritius pension system is the decreasing fertility rate and the rising life expectancy. The total fertility rate has decreased from 5.86 in 1962 to 1.37 in 2018 whilst life expectancy at birth increased from 65 years in 1965 to 75years in 2018. According to Mauritius Commission on Population and Development (MCPD-2019), the total fertility rate is currently below the replacement level. A major implication of this demographic change is that the share of the elderly (60 years and above) of the population will increase sharply from 13 percent of the total population in 2013 to 30 percent by 2050 and 35 percent by 2100. This is a major challenge to the Mauritius pension system because the BRP universally covers all individuals aged 60 years and above and is financed through the budget of government.

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 DB plan (Antolin, 2007). For example, universal pensions already accounted for 28 percent of government expenditure and 7.3 percent of GDP in 2014 (Statistics Mauritius, 2014), which is high compared to other developing countries. Generally, pension payments increase because it is indexed against inflation. It is projected that without meaningful reforms the NPS will exhaust its assets and eventually creates liabilities which will make it difficult to finance after 2060 (Soto et al, 2015).

Another challenge is that the Civil Service Pension Scheme (CSPS) lacks the required level of funding to protect benefits from future budgetary demands (Soto et al, 2015). Furthermore, there is no harmony between the terms and conditions the CSPS offer and those of the private sector

institutions, with the result that labour mobility between the civil service and the private sector is limited (Ibid).

5.3.8.2 Adequacy

At its inception in 1978, the NPF aimed at a replacement ratio of a third (33.3 percent) of the average salary for continuous contributions of 40 years (Vittas, 2003).), which is relatively low compared to international experience and norms. 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. The World Bank (2004) further projected a replacement ratio of less than the targeted value by 2020. This assessment is based on the poor use of the price index that 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 to enhance the sustainability of the fund. This contradicts standard practices, for instance, the ILO (2014a) prescribes a regular adjustment of indexes that will keep the replacement ratio at least at 40 percent. One of the most relevant requirements of a pension system is to enable individuals to maintain their living standards after retirement.

5.3.8.3 Affordability

Significant fiscal pressure in most economies creates concerns over how much countries can spend on pension programmes. Several studies have focused on the cost of pensions in Mauritius. For example, Guven and Leite (2016) identify fiscal affordability of the BRP scheme as the main challenge. At the 2008 OECD/IOPS Global Forum on Private Pensions, it was disclosed that the high administrative cost of private pensions in Mauritius and other sub-Saharan African countries

are 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. The ILO (2018c) conducted a simulation of universal pension schemes and discovered that about 1 percent of GDP goes to universal pensions funding in some African countries, which according to the organization, is affordable.

However, countries with well-established universal pensions may have higher financing costs than the simulation showed. As mentioned earlier, in 2014, universal pensions in Mauritius accounted for 28 percent of government expenditure and 7.3 percent of GDP (Statistics Mauritius, 2014).

5.3.8.4 Equitability

The equitability of a pension system requires that resources are reallocated from the rich to the poor in line with social norms adopted in policies. An equitable pension plan may put less emphasis on work history and does not link employee earnings to pension benefits (Kaplow, 2000). The 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. The amount of pension depends on the age of the beneficiary and is adjusted annually for inflation. The system is especially beneficial to the vulnerable, women, and informal workers (Clements, Eich & Gupta, 2014). In 2018, the BRP has paid benefits to about 211,000 retirees.

5.3.8.5 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 basic pension offers a flat rate to every person aged 60 years and above. For example, in 2014, pensioners below 75 years received Rs 174, while those between 75-89 years and those above 90 years received Rs 200 and Rs 300 respectively. 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 two-thirds (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 of the system.

Contributory schemes such as the NPS and NSF also comply with predictability. The benefits paid are determined by: the value of accrued contributions, investment returns, and the rate at which accrued capital is converted into pension points (Antolin, 2007). As indicated earlier, the NSF pays a lump sum benefit at retirement and is determined by the contribution history and yields from investments subject to a “no-capital loss” guarantee. Thus, a beneficiary cannot receive a lump-sum payment smaller than the amount of contributions paid into the account. The Institute and Faculty of Actuaries Pensions (2018) opine that the payment formula adopted by NPS and NSF is predictable and indicates the rise in benefits. Investment decisions and the duration of benefit payments are designed to improve pension outcomes.

5.3.8.6 Robustness

Fall and Bloch (2014) observed that the aging population and the reduction in the fertility rate put the country’s long-term financial stability of pensions at risk and make it more vulnerable to

economic or political 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 which is still maintained at 60 years. This move improves the position of pension funds to meet the pension needs of an aging population.

The NPS though fairly robust at present, is projected to exhaust its assets and to experience a considerable decline in the long run in its financial position. If NPS is unable to pay accrued benefits, the government may have to provide a bailout to ease the impact on members and to reduce the chances of pensioners falling into poverty. Such a development will have significant fiscal and political risks (Soto et al, 2015)

5.3.8.7 Labour market Impact

The universal nature of the scheme may discourage higher income earners from participating in contributory pension schemes (Levy & Schady, 2013). In Mauritius, employees of the public sector 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).

5.3.8.8 Contribution to savings and financial market development

Pension funds usually constitute a substantial and necessary source of capital accumulation (Kangas, 2006). Contractual savings with insurance companies and pension funds play a significant role in the financial system of Mauritius and constitute over 40 percent of the country's GDP. For instance, Pension funds from NPS, NSF, and other private pensions accounted for 75 percent of contractual savings (OECD/IOPS Global Forum Session- II, 2019). They currently account for a significant percentage of total outstanding housing loans. In addition to the publicly managed pensions, there are over 1,000 funded occupational pension schemes that play an increasingly important role in the financial system (Mauritius Financial Services Commission, 2015).

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.

5.3.9 Conclusion

Mauritius has a four-pillar pension system. Pillar zero consists of a universal non-contributory Basic Retirement Pension, while pillar one is made up of the Civil Service Pension Scheme (CSPS) and the National Pension Fund (NPS). The main objective of the NPS is to provide a continuous income for workers not covered under the CSPS. Pillar two consists of the National Savings Fund (NSF) that inter alia pays a lump-sum amount to contributors, and lastly, pillar three is the private voluntary contributory pension plan. The funds of the private schemes are managed by employers with weak supervision by the government (World Bank, 2015).

Rising life expectancies together with a low total fertility rate threaten the long-term sustainability of the pension system, especially the BRP and the CSPS schemes. This is because it

prolongs the period of retirement, which in turn increases the liabilities of the DB plan (Antolín, 2007). Whereas regular adjustments to the BRP are made to ensure pension adequacy, the NPS does not adjust the price index regularly, leading to a low replacement ratio to enhance sustainability.

Mauritius' tax-financed BRP makes its pension system equitable and provides great relief to the aged poor. It is important to note that Mauritius has achieved 100 percent pension coverage. The system provides a flat or basic pension to all residents or citizens 60 years and above and no other condition is required to be eligible. The BRP and CSPS are indexed to price fluctuations and there are laid down payment procedures that made the Mauritian pension system largely predictable. However, the system is expensive that may jeopardise its sustainability. Although the NPS is fairly robust at present, it is projected to exhaust its assets and show considerable long-term deterioration in its financial position (Soto et al, 2015). Pension funds constitute a substantial and important source of capital accumulation in Mauritius (Kangas, 2006). The pension funds of the NPS, NSF, and other private pensions accounted for 75 percent of contractual savings (OECD/IOPS Global Forum Session- II, 2019).

Notwithstanding this, 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 major factors militating against the smooth performance of the NPS. According to Guven and Leite (2016), challenges inherent for the BRP and the NPS, include inaccurate data for the elderly, bureaucratic bottlenecks, the lack of autonomous fund administrators and independent governing boards responsible for funds and asset management. These issues need to be addressed to improve the adequacy and sustainability of the system. Lessons learned from the Mauritians system are summarised and compared to other countries in the next chapter (see Table 6.2 and appendix H).

5.4 THE PENSION SYSTEM OF SINGAPORE

5.4.1 Introduction

Singapore Island is a city-state located in South-Eastern Asia at the southern tip of the Malay Peninsula. After 144years of British rule, the nation declared independence and separated from the federation of Malaysia in 1965, and had its first presidential election in 1993. According to the country's constitution, each elected president will hold office for a six-year term which is renewable indefinitely (Hirschmann, 2020).

Singapore is a high-income economy with a per capita GNP of US$54,530 in 2017 (World Bank, 2019). The country is ranked among the world's most competitive economies. According to the World Bank Human Capital Index (2018), Singapore ranks the highest in the world from a total of 157 economies with a score of 0.88.

Singapore is currently experiencing an aging population and consequently increased life expectancy at birth. In 2010, its life expectancy was 81.65 and this rose to 83.66 in 2020 which is one of the highest in the world. According to the World Population Prospect (2019), in 2017, 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. The total population of Singapore grew from 3.01 million in 1990 to 5.8 million in 2019; of which 4.0 million are members of the pension fund (CPF Board, 2019). 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, Mitchell & Koh, 2010). The different pension accounts of the CPF forms the multi-pillar scheme.

It is important to note that Singapore is higher on the development spectrum than Ghana and the other countries discussed, but despite this much can be learned from this successful country. This

section explores the operations of the CPF pension scheme, its implications on the life of workers, pensioners, and the government of Singapore. Lessons that can be learned from this system are also discussed.

5.4.2 Evolution of the pension system in Singapore

Before 1955, many employees in Singapore did not have any social security package to guarantee them pension income upon retirement (Seng, 2014). Only a few employees in the civil service and some large companies benefited from such social security guarantees from their employers. Workers had to depend on their savings or children when they stopped working (Seng, 2014). To ensure that workers could support themselves after retirement, the Save-As-You-Earn (S-A-Y-E) Central Provident Fund Ordinance was passed on 11th December 1953 which subsequently became the Central Provident Fund effective from 1st July 1955.

According to Barrientos (2002), one of the oldest and well-developed national pension schemes in Asia is Singapore's Central Provident Fund (CPF). Singapore's Provident Fund was established to encourage retirement savings. The design and the implementation of the fund were control by the British colonial administration. The underlying principles of the CPF system are self-provision and self-reliance that 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 (OECD, n.d). 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, and tertiary education needs in addition to pension-related withdrawals, for example, the purchase of fitness equipment. The housing provision made the country a nation of homeowners (Barrientos, 2002). In addition, the CPF makes provision for medical savings (Medisave) and insurance (Medishield) schemes which are an integral part of the country's health system that has facilitated high-quality medical care to members.

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 responsibilities of the board are to ensure the safekeeping of contributions, the administration of the scheme, and the collection of contributions and benefit payments. The board invests contributions into special securities issued by the government (see section 5.4.8.9) to guarantee that funds are not directly exposed to investment risks (OECD, n.d). The minimum retirement age for workers; both men and women are 62 years. Up to the age of 62, employers cannot force employees to retire; however, members can stay employed after attaining the retirement age.

5.4.3 The Central Provident Fund System

The CPF extensively focused on retirement savings during its early years. The monthly contribution rate at the time was 10 percent of basic monthly earnings shared equally between employees and employers. In 1972, the government changed this proportion by making employees contribute 10

percent of their monthly salary and employers 14 percent leading to a total monthly contribution of 24 percent. The latest revision of the contribution rate was in January 2016 (see Tables 5.7 and 5.8). Table 5.8 shows employees contribute 15 percent of their monthly salary while employers 12.75 percent raising the total contribution rate from the previous 24 percent to 27.75 percent. This revision was to use the CPF as leverage to solve other critical social needs of the country, for example, health care, education, and housing needs. Consequently, the monthly contributions for each member are automatically separated and credited into three accounts namely: Ordinary Account (OA), Special Account (SA), and Medisave Account (MA).

The OA is for housing, tertiary education, and topping up the retirement account of loved ones such as parents and spouses who may have low pension savings to assist them to qualify for a monthly payment. The OA ensures that all pension contributors save for critical needs during retirement. Although one may accuse such an approach as paternalistic, the main objective of this policy is to protect pensioners against poverty.

The SA on the other hand is savings for old age and is invested in retirement-related financial products like fixed deposits. The MA is reserved for hospitalization expenses and other approved medical insurance. On the 55th birthday of a contributor, a fourth account called Retirement Account (RA) is automatically created into which all savings from the SA and the OA are transferred. The RA, also known as the Full Retirement Sum (RS) provides pensioners with monthly pension payments.

One of the reasons for the success of Singapore's CPF is the regulatory limits set on withdrawals from the accounts. Members of the pension scheme can only withdraw from their saving account after they have reached a government-determined Full Retirement Sum (RS) in their RA. The RS is stipulated at S$60,000 since 2008. Meanwhile, withdrawal can only be made from

the OA and SA accounts and not from the MA account because the need for an individual's medical care increases with age, therefore the account is earmarked strictly for this purpose. Contributors born in 1958 or after have the option to withdraw a maximum of 20 percent from their SA. However, one does not have to withdraw all allowable savings on one go when younger than 55 years. This is to ensure that the RA balance exceeds the minimum amount (RS) determined by the state. There can be a full or partial withdrawal as often as preferred after 55 years towards retirement-related needs. The various accounts of the CPF are summarised in Table 5.4 below.

Table 5.4: Summary of Central Provident Fund (CPF) Accounts

Account type	Uses of CPF Savings
Ordinary Account (OA)	For housing, insurance, investment, tertiary education and topping up retirement account of love 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: CPF Board (2019).

It is important to note that the World Bank's pension system recommendations indicate that for some nations, mandatory pillars one and two may not work well towards income smoothing during old age, but could achieve better outcomes in combination with a social pension and a more extensive voluntary system. This pillar four also makes provision for other individual financial and non-financial assets such as homeownership, healthcare that are voluntary and privately managed (World Bank, 2005b). It acknowledges that the availability of informal support by family,

individual financial and non-financial assets, such as homeownership and reverse mortgages to the elderly may have a bearing on the design and implementation of pension pillars. Furthermore, the World Bank (2005a) argues that certain pillars are designed to address the needs of the lifetime poor and informal sector workers better than others. According to Ramesh (2006) and Pundarik and Sunil (2014), the World Bank's fourth pillar of pension reforms emphasized a high level of family support and homeownership, and the Singaporean CPF scheme corresponds with this.

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. The objectives of the CPF scheme are to: improve old age income, create easy access to homeownership, settle healthcare costs, finance citizens' tertiary education, and give financial protection to families. It can therefore be regarded as a comprehensive social provision system. Figure 5.2 summarises the objectives of the CPF.

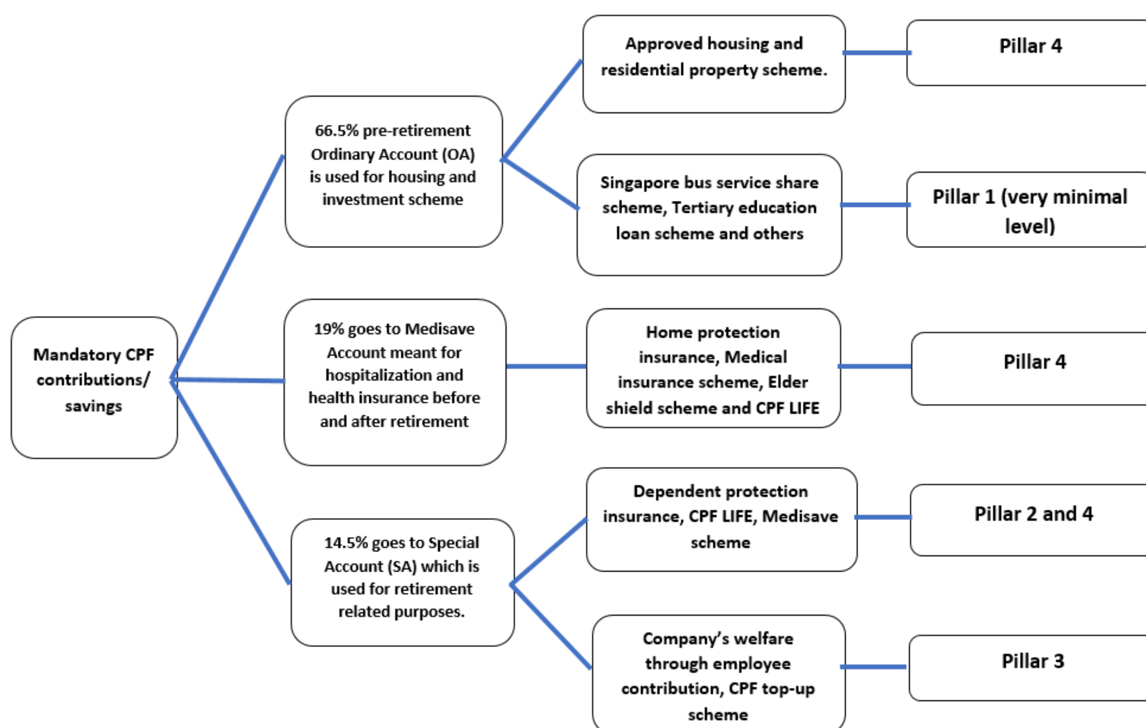

Figure 5.2 Singapore's CPF compared with the World Bank's multi-pillar pension system **Source:** Pundarik and Sunil (2014, 194)

According to the Singapore Ministry of Manpower (2017), nationals or permanent residents in employer-employee relationships are obliged to make monthly contributions to the CPF. The monthly contribution rates into the various CPF accounts are set by the government and it varies with; age, sector of employment, and between employers and employees. Table 5.5 shows the various allocation rates into private sector employees' accounts from January 1, 2016.

Table 5.5: Monthly CPF allocation rates for private sector workers

Employee's Age	Monthly CPF allocation rates into employees' accounts (in Singapore dollar)		
	Ordinary Account (% of wages)	**Special Account (% of wages)**	**MediSave Account (% of wages)**
35 and below	23	6	8
Above 35 to 45	21	7	9
Above 45 to 50	19	8	10
Above 50 to 55	15	11.5	10.5
Above 55 to 60	12	3.5	10.5
Above 60 to 65	3.5	2.5	10.5
Above 65	1	1	10.5

Source*:* CPF Board (2019).

For the OA, the age variation exists because people are obliged to pay higher contributions during early years of work toward home acquisition, education, and insurance but, these payments reduce with age. The contribution rate towards old age, contingencies, and investment in retirement-related financial products in the SA increase until age 55 years and declines after that. The rationale behind this is to ensure workers start early and save more in their early years of work for retirement needs.

Lastly, the contribution rate towards the MA increases up to age 55 years and remains constant till 65 years. This is because the needs of individual medical care increase with age, so it is important to raise the contribution rate when the worker is younger. However, the contribution rate into accounts of private-sector workers varies from those of public sector workers. Table 5.6 summarises the contribution requirements for public sector workers from January 1, 2016.

Table 5.6: Monthly CPF allocation rates for public sector employees

Employee's Age	Monthly CPF allocation rates into employees' accounts (in Singapore dollar)		
	Ordinary Account (% of wages)	**Special Account (% of wages)**	**MediSave Account (% of wages)**
35 and below	17.25	4.5	6
Above 35 to 45	15.75	5.25	6.75
Above 45 to 50	14.25	6	7.5
Above 50 to 55	11.25	8.625	7.875
Above 55 to 60	9	2.625	7.875
Above 60 to 65	3	1.875	7.875
Above 65	0.75	0.75	7.875

Source: CPF Board (2019).

Table 5.6 shows that the monthly contribution rates for the CPF vary for private and public sector employees. For example, the contribution rate for CPF by employers of workers who earn above $750 and are below 55 years is 17 percent, while employees' share of the contribution is 20 percent as of January 2016. The rate decreases when the worker is above 55 years for both employers and employees in the private sector effective January 1, 2016 (see Tables 5.7 and 5.8).

Table 5.7: Monthly contribution rates into the CPF account for private sector employees

Employee’s Age (years)	Employees total monthly wage	Monthly contribution rates for wage employees (in Singapore dollar)		
		By Employer (% of wage)	**By Employee (% of Wage)**	**Total (% of Wage)**
55 and below	Wage < $50	Nil	Nil	Nil
	$50<Wage ≤ $500	17	Nil	17
	$500<Wage≤ $750	17	0.6(TW - $500)	17 + 0.6 (TW - $500)
	Wage > $750	17	20	37
Above 55 to 60	Wage > $750	13	13	26
Above 60 to 65		9	7.5	16.5
Above 65		7.5	5	12.5
**TW = Total Wage				

Source: CPF Board (2019).

Contributions of both the employer and the employee are to be paid into the fund by the employer and supervised by a governing board (CPF Board). A CPF contribution is not compulsory for citizens working overseas. For the private sector, contribution rates for both the employee and the employer are set higher than for the public sector. The contribution rates are set higher to compensate for any fall in income that may arise due to interruptions in work history caused by unemployment. On the other hand, public sector jobs are considered more stable, and contributions are fixed at a relatively lower rate. Table 5.8 summarizes the CPF contribution rates for public sector workers effective January 1, 2016.

Table 5.8: Monthly contribution rates into the CPF account for public sector employees.

Employee's Age (years)	Monthly contribution rates for wage employees (in Singapore dollar)		
	By Employer (% of wage)	**By Employee (% of Wage)**	**Total (% of Wage)**
55 and below	12.75	15	27.75
Above 55 to 60	9.75	9.75	19.5
Above 60 to 65	6.75	5.625	12.375
Above 65	5.625	3.75	9.375

Source: CPF Board (2019).

5.4.4 Discussions of major components of the CPF pension system

As mentioned earlier, housing and health care benefits are integral parts of the CPF pension scheme and much success has been achieved by the scheme in this regard. These issues are discussed next.

5.4.4.1 Housing Needs

An important feature of Singapore's pension system is the benefit of homeownership to CPF contributors which is financed by the OA. The government instituted a policy of homeownership for workers of all sectors after it gained independence from the Malaysian Federation. This housing scheme was made an integral part of the CPF as it was perceived that homeownership before retirement will prevent pensioners from paying rental fees from their pension benefits. This aspect of the pension scheme has been contributing to sustainable economic growth, raising savings, and homeownership (Sock-Yong, 2007).

This achievement can be attributed to early access to pension savings through the public affordable housing scheme introduced by the government in 1968 where CPF contributors were permitted to use savings from the OA only (after setting aside the Full Retirement Sum) to acquire government flats. This provision was later extended to include the acquisition of private residential property under the Residential Properties Scheme of 1981. According to the World Bank (2019),

the funds from the housing scheme (OA) can be used to refurbish or purchase a house, as well as to pay for a mortgage. Although the fund can be used to acquire private housing, the majority of the properties acquired are public housing supplied by the Housing and Development Board. The market values of these flats are now more than double their acquisition price (World Bank, 2019). House ownership stands at 91 percent with 80 percent being from public housing. This achievement puts Singapore in fourth place in 2019, next to Romania (95.8 percent), Hungary (91.7 percent), and Slovakia (91.3 percent). The figures for Portugal and Italy were 43 percent and 61 percent respectively (OECD, 2019).

5.4.4.2 Healthcare Needs

In 1984, the CPF was expanded to also take care of the healthcare needs of contributors and pensioners when the Medical Account (MA) was introduced. A further component of the MA known as, MediShield was introduced in 1990 as a medical insurance scheme to take care of expenses incurred on long, and chronic illnesses up to the age of 92 years. In 2004, the Medisave Minimum Sum (MMS) was launched to ensure that members would have enough savings to take care of their healthcare needs during old age. Contributors must ensure that the necessary fund for the MMS is set aside before any withdrawal from their CPF savings account when they reach the age of 55 years. The amount stipulated was S$43,500 in 2015. In 2016, the MMS was modified and replaced with the Basic Healthcare Sum (BHS) that set the minimum at S$49,500. Unlike the MMS, the BHS does not require members to set aside any amount before withdrawal from their CPF account. The Medisave health provision has been a very successful scheme, and Singapore can boast of a life expectancy of 85.2 years. The scheme also relieves the government of fiscal provisions for health care (CPF Retirement Booklet, 2019). To address the problem of an aging population, the country introduced a CPF Life scheme in 2009. This scheme is a national annuity

scheme that provides a life-long retirement income security for the aged even if the MediShield insurance provision is depleted after age 92 (CPF Board, 2011) (see section 5.4.3).

5.4.5 Coverage

The design of the CPF ensures that almost every worker in the labour market is covered. This is achieved by setting the minimum threshold for participation at an earning of S$50 per month (see Table 5.7). It is mandatory for every worker, public or private, hired or self-employed, who earns this amount or higher 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. As indicated earlier, there are 4.0 million pension fund members of a projected total population of 5.8 million in 2020 (CPF Board, 2019).

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). The scheme's total fund was around US$ 150 billion with 3.31 million members in 2011. This figure jumped to US$ 425.1billion with 4.0 million members in 2019 (CPF board, 2019). 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 (e-submissions) 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).

Coverage is further enhanced by recent interventions by the government to keep the elderly in the labour market beyond 62 years. This move is emanating from the rising life expectancy of Singaporeans (see section 5.4.8.2).

5.4.6 Weaknesses of the Central Provident Fund system

Some of the weaknesses of the CPF are:

- Too much capital may be withdrawn before retirement that could lead to a liquidity crisis during retirement and an inadequate pension income as the life expectancy of Singaporeans increases (see section 5.4.8.2).
- The benefits of the MediShield health care scheme 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 scheme was introduced to address this.
- Finally, the CPF is discriminatory against non-residents because it excludes them from participation (Pension Fund Online, n.d).

5.4.7 Other special pension provisions

Asher (1999) indicates that, apart from the CPF, Singapore operates another pension scheme called the Savings and Employees Scheme, also known as the "Saver Scheme". It is a Provident Fund scheme for Armed Forces Personnel, introduced as an amendment to the constitution of Singapore passed on 20th March 1998. Members of this scheme continue to receive post-retirement medical care as applied to those in active service. The scheme receives funding from three sources; the government's consolidated revenue account, mandatory contributions from personnel, and investment income of the scheme. Military personnel contribute 13 percent of their income for the first six years of service and this increases to 15 percent after that. This scheme has been described as generous and is designed to encourage officers to stay in service for 20-25 years and retire at age 40-45 years, yet their benefits are equivalent to those workers outside the service who retire at age 55 years. This pension provision aims to make the military service attractive and to employ young

individuals due to the peculiar nature of the profession (Asher, 1999). This approach may be questioned from an equity perspective.

5.4.8 Assessment of the CPF pension scheme

The assessment of the CPF is again based on the eligibility criteria of the World Bank (2005a). These criteria are discussed in the next sections.

5.4.8.1. Sustainability

As indicated earlier, life expectancy in Singapore has been increasing over the past decades. According to the UN (2010), the elderly dependency ratio[11] is estimated to rise from 12.2 percent in 2010 to 48.7 percent in 2050. Thus, about half of the population over 65 years today is expected to live beyond 85 years. The aged population is projected to rise from 0.46 million in 2010 to 1.40 million in 2030, which represent a 207 percent rise in the aged population within just two decades and represents a serious demographic change. A major challenge facing pension systems is an aging population that may hamper sustainability, which is typically experienced by most nations with DB pension plans (World Economic Forum, 2017). Singapore's CPF is a DC plan that pays lump sum benefits to members as indicated earlier. 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.

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[11] The proportion of the population 65 years or above expressed as a percentage of the population aged between 15–64 years

The eligibility criteria for CPF Life require that one must be a Singapore citizen or a permanent resident born in 1958 or after with at least S$60,000 in the Retirement Account six months before retirement. The CPF Life is expected to make the pension scheme more sustainable, fair, flexible, and affordable (World Economic Forum, 2017).

A pension scheme is regarded as financially sustainable if its assets cover members through their entire retirement life (see sections 2.4.2 and 2.4.3). Ensuring a fair and sustainable pension scheme is a daunting task for most pension fund managers. To address these challenges, Singapore's CPF Life computes premiums and pay-outs in consultation with autonomous specialised actuarial organisations that take into account members' life expectancy based on age and sex, which is revised regularly depending on variations in mortality and investment returns (World Economic Forum, 2017).

The CPF Life ensures that retirees receive a stable retirement income. To dispel fears of loss of investment income, beneficiaries are guaranteed at least a benefit equal to the amount of contributions paid into the scheme (World Economic Forum, 2017). This is made possible by investing the CPF Life in special long-term securities issued and guaranteed by the Singaporean government. In addition, the investment earns a risk-free interest rate of up to 6 percent per annum. According to Fong, Mitchell and Koh (2010), members of CPF Life have confidence in the state-run scheme because they perceive it to be safer than private insurers that may face bankruptcy.

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 several ways:

- The scheme permits members to choose their premiums that will correspond to their desired retirement needs.
- Pension payouts are proportional to the quantum of individual contributions and investment returns.
- Members have the discretion to choose the age at which payouts should commence once they fall in the eligibility age of 65 years.
- The scheme provides an incentive of a 7 percent rise in payouts for each year deferred from the date eligibility starts. This provision benefits those who do not need their payouts immediately after retirement, especially those who are still engaged in the labour market.
- Lastly, CPF Life allows transfer from CPF savings accounts above the minimum threshold (RS) 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).

The foregoing notwithstanding, Asher and Bali (2013) are of the view that from a broader perspective, the use of pension savings for mortgage financing, healthcare expenditure, and the implicit tax on the rate of return on CPF wealth may be detrimental to the sustainability of the system.

5.4.8.2 Adequacy

A determinant of pension adequacy is the income replacement ratio (IRR), which is the ratio of retirement income to pre-retirement earnings. The OECD (2017) proposed an average of 72 percent IRR to ensure a moderate living standard. Scheiber (2004) and McGill, Brown, Haley & Schieber (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 $148,000 (in 2017). Melbourne Mercer (2012) estimated that the average income earner in Singapore received an IRR below 20 percent. Earlier on, the OECD (2009) found that Singapore's IRR was as low as 13 percent compared to the 72 percent average obtained by its 34 member countries. What is the reason for the low IRR?

According to the World Bank (2019), too many capital withdrawals before retirement are responsible for the retirement liquidity crisis in Singapore. For example 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. Koh (2014) also noted that pursuing high homeownership is at the expense of diminished retirement income adequacy. He indicates that in 2013, 44 percent of cumulative CPF contributions have been invested in housing leaving the remainder for health care, insurance protection for the family, asset enhancement for future consumption, and other retirement needs.

Assuming that the OA and SA accounts of CPF members remained intact and are not drastically reduced for wealth creation or asset acquisition purposes, the OECD (2009) found that Singaporeans would have achieved an 82 percent IRR. The study by Chia and Tsui (2012) also estimated a 70 percent IRR for an average male income earner if he retires at 65, while the female counterpart could earn 64 percent. They concluded that a young Singaporean joining the labor force would most likely have generated sufficient savings for retirement.

To boost retirement income adequacy, Koh (2014) proposed that Singapore's CPF must undergo some reforms:

- Monetization of home equity through reverse mortgages, subletting parts of one's home to earn rental income, downsizing by moving from large housing units to smaller ones and a "lease and buyback" scheme where homeowners sell the remaining lease period to the

public housing authority in exchange for a lump sum payment according to which the lease would expire after 30 years, implying the loss of the home.

- Placing a limit on the CPF withdrawal for housing.
- Raise the CPF allocation rate for older people to increase the full Retirement Sum (RS).
- Hedging the mandatory life annuity against inflation.
- Adjust the current retirement age beyond 62 years to pave way for the aged to remain in the labour market for longer to improve their financial status in retirement.

Recent reforms to raise the minimum amount required for the OA and SA accounts, and the institution of the National Longevity Insurance Scheme (CPF Life), are measures to address the challenges confronting the system and means to improve income security for retirees. It is instructive to note that currently, Singaporean citizens are allowed to work up to age 75 years to improve their income capacity (World Economic Forum, 2017). To encourage this provision, an employment credit of up to 8 percent of wages is provided to employers who employ older persons above 55 years. In addition, employers are also given grants to redesign jobs for the aged and adopt age-friendly workplace practices. As of 2017, each employer is eligible for up to S$ 320,000 grant (World Economic Forum, 2017). Due to these measures, about 40 percent of Singaporeans between the ages of 65-70 years are still in the labour market (Fong et al, 2010).

5.4.8.3 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). Loke (2009) observed that at the center of CPF's success is the constant refinement of the scheme to improve the housing, investment, and pension needs of its members amidst demographic and economic changes. 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.

CPF Life is a distinguishing feature of the CPF and provides monthly annuities to its members at retirement. The scheme automatically enrolls members to optimize the gains of risk-pooling and to realize economies of scale. The scheme avoids distribution costs and adverse selection when determining its premium, which serves as a major consideration for most private annuity markets (Chen & Tan, 2018). 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. According to Loke (2009), the CPF has been well-received domestically by Singaporeans. The overwhelming popularity the CPF has gained among Singaporeans is due to the relief the system brought to workers and its positive impact on family and national lives.

5.4.8.4 Equitability

The equitability of a pension system involves redistributing income from the affluent to the needy in line with social objectives (World Bank, 2008). 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 benefits of economic growth (Phang, 2001). The government's 'aided school'[12] policy of expenditure on scholarships, grants, and bursaries in the CPF Ordinary Account through an "Edusave Scheme" is aimed to achieve this feat. An Edusave account is created for all

[12] "Aided school" refers to schools receiving grant-in-aid under the Singaporean Education (Grant-in-Aid) Regulations.

eligible Singaporean students who receive a yearly income transfer for their educational needs. In 2019, an annual benefit of S$230 and S$290 was received by primary and secondary students respectively. A child's Edusave account is closed at the age of 17 years. The balance in the account is then automatically transferred to their Post-Secondary Education Account which attracts an interest rate of 2.5 percent (Singapore Ministry of Education, 2020).

The educational provision in the CPF has yielded remarkable outcomes. As indicated earlier, Singapore ranks high in the United Nations' Human Development Index, which measures the performance of education, health, and the level of economic development. In 2014, Singapore ranked 11th globally and 1st in Asia. Moreover, the performance of Singaporean students ranked high regarding abilities such as reading, mathematics, and science, in the OECD Programme for International Student Assessment (PISA) test. In 2015, Singapore ranked first among 72 countries in the PISA test (OECD, 2015). The provisions through CPF have reduced the extent of extreme poverty (Seng, 2014) and created scope for social mobility.

In addition, the CPF aided by the government assumes the responsibility to supplement the RA to the tune of S$60,000 (since 2016) to enable low-wage earners to qualify for the CPF Life annuity. Subsequently, the government introduced the Workfare Income Supplement Scheme (WIS) to encourage low-income workers whose incomes fall at the bottom 20 to 30 percent to remain in employment. The scheme offers an annual income supplement of up to 30 percent of the annual earnings of workers. The WIS has two components; the cash component to supplement the low-income and the CPF component that aids beneficiaries to build their retirement savings account to qualify to become part of CPF Life.

In 2016, another noncontributory scheme called the Silver Support Scheme (SSS) was introduced to complement the WIS. This SSS provides income supplement only for retired

Singaporeans above 65 years whose incomes fall between the bottom 20 to 30 percent. The beneficiaries must belong to a household with a monthly household income per person not exceeding S$1,800 and live in a 1- to 5-room type of Housing and Development Board (HDB) flat and do not own, or have a spouse who owns, a 5-room or larger HDB flat or private property or multiple properties. Those who live in smaller flats received higher payments. In 2020 for instance, those who live in a 1-2 room HDB flat received S$900 every quarter, and those who live in but do not own a 5-room HDB flat received S$360. A total of 150,000 Singaporeans benefit from this scheme financed from the government's budget (Singapore Budget, 2020). The CPF Board automatically reviews the eligibility for SSS every year.

The CPF has other redistributive features that inure to the benefit of low-income earners. For example, since 2016, an extra 1percentage point interest is paid on the first S$30,000 of CPF balances for members aged 55 and above. There is 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 RA. These special features embodied in the CPF make the pension scheme equitable and different from a typical DC pension scheme. The scheme makes provision for individual responsibility as it is based on personal savings, as well as collective responsibility through risk pooling (Chan, Khai & Lim, 2016).

5.4.8.5 Predictability

A predictable pension system ensures that the benefit formula is clearly defined by law and not based on any arbitrary determination by policymakers or fund administrators (World Bank, 2008).

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 will top up the difference

to meet the BRS which would allow members to enroll in a CPF Life to earn a life annuity. If by age 55 years an individual owns a house, he can opt to set aside only the specified BRS which was S$83,000 in 2017 and S$88,000 in 2019. A Full Retirement Sum (twice the BRS) must be set aside by individuals who do not own a home. This amount stood at S$166,000 in 2017 (CPF Retirement Booklet, 2019). Savings above this specified amount can be withdrawn as a lump sum. There is also an option for an Enhanced Retirement Sum (thrice the BRS) for those who want to set aside a larger specified sum for retirement. In 2017 the Enhanced Retirement Sum was S$249,000. The age for the commencement of the monthly payouts is 65 years in 2019. Members who want higher monthly payouts can delay their benefits until age 70 (OECD, 2018). According to Dayani (2018), the Retirement Sum options are not static but increases each year to take care of the rising cost of living and inflation.

5.4.8.6 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 build up in individuals' retirement accounts (Chan, Khai & Lim, 2016).

The Singaporean CPF has been buoyant to the demographic shock caused by CPF members' longevity and investment risks, which 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 revenues are invested in Special Singapore Government Securities (SSGS), which are bonds issued with an AAA credit

rating[13]. 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. For example, in 2019, the interest rate on CPF accounts attracted up to 6 percent per annum (CPF Retirement Booklet, 2019) 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. Investment with CPF also attracts an additional 1 percentage point interest rate for older members and low-income earners with insufficient balances in their accounts.

Furthermore, the structure of the housing loans market has paved the way for the CPF contribution rate to be applied as an instrument for macroeconomic stabilization (Phang, 2001). The CPF has undergone many changes to boost the country's economic fundamentals and the security markets. 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 to retain their jobs even though this meant a shortfall in CPF savings (Asher, 1999).

The 2008 Global Financial Crisis did not have any negative impact on jobs as well as the CPF fund (Wilson, 2011). The reason was that the government of Singapore embarked on a strategy to save jobs during this period. Preventing job losses was to mitigate low pensions in the future, which would eventually relieve the government of the burden of pension supplements in the long run. Because of this, the government introduced a Jobs Credit Scheme in its budget in 2009 that entitled employers with a cash grant. For each worker on their CPF payroll, employers received 12 percent back on the first S$2,500 as cash grant payable quarterly for the whole of 2009. The scheme, therefore, decreased employers' burden effectively by 9 percent (Wilson, 2011).

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[13] AAA-rated bonds have a high degree of creditworthiness because their issuers can easily meet their financial commitments and have the lowest risk of default.

5.4.8.7 Labour market impact

The provisions of the CPF encourage the labour market participation of CPF members. Incentives are given to the elderly to continue working to enhance their retirement income. For example, special employment credits of up to 8 percentage point of wages are given to employers who engaged older persons above 55 years old (see section 5.4.8.2). 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.

A study by Chen and Tan (2018) concluded that the noncontributory Silver Support Scheme (SSS) did not reduce labour supply in Singapore. Also, their study found no evidence to suggest that recipients of SSS had expectations of working after age 70. Likewise, the expectations of young individuals to receive SSS payout in the future did not influence their current expenditure patterns nor work decisions.

5.4.8.8 Savings mobilization

According to Koh (2014), the compulsory savings by Singaporean workers through the CPF has boosted savings at the national level. This is achieved by channeling members' contributions into various accounts to take care of their various needs such as home acquisition, child education, investment, retirement, and healthcare needs. A study by Wickramanayake (1998) found a positive impact of CPF contributions on savings in Singapore with a significant positive effect on the country's financial sector. Ng (n.d) also noted that without CPF, capital mobilization for the massive public housing project would not have been possible.

Asher and Bali (2013) noted that the CPF averagely contributed 8.1 percent of GNS between 1997 to 2011. This rate is low considering that the GNS to GDP ratio for the same period was 49 percent. This suggests that the bulk of national savings for this period may have come from the

alternative investment options available to individuals (see section 5.4.8.9), the business sector, and government rather than from CPF savings. The relatively low contribution to GNS by the CPF may be due to early withdrawals from the OA and SA accounts for homeownership, education, and investment in assets. For instance, for the same period (1997-2011), the withdrawals averaged as high as 74.9 percent of the contributions (Asher & Bali, 2013).

5.4.8.9 Financial market development

CPF members have two options when it comes to investing their pension contributions. They either allow the CPF board to invest the funds on their behalf or choose from other available investment products. The Singapore government issues Special Singapore Government Securities (SSGS) that is used by the CPF Board to invest its funds which constitutes the largest share of SSGS. For instance, the CPF board held 84.12 percent and 71.5 percent share of SSGS's compared to 8.49 percent and 16.3 percent held by Commercial Banks in 1987 and 1996 respectively. The CPF board's investment is the largest single pool of investible funds in Singapore next to foreign reserves (Ng, n.d). SSGS proceeds are pooled together with other government funds and are invested in foreign assets. According to Singapore's Department of Statistics (2016), direct equity investment contributed to the bulk of the foreign investment (88.5 percent or $US 693.2billion), while net lending to overseas affiliates accounted for the remaining 11.5 percent ($US 90.3 billion). The various investment portfolios by the government are managed by the Government Investment Corporation (Nesadurai, 2006).

It emerged that the majority of those who chose to invest somewhere else, earned interest rates lower than the CPF board's guaranteed interest rate, and some even lost part of the principal amount invested (Koh, Mitchell & Fong, 2010). Due to this poor performance compared to the attractive guaranteed risk-free rate of return offered by the CPF board, most CPF members turn to

the CPF board to manage and grow their funds rather than investing in securities. Fong (2020) observed that only 16 percent of CPF account holders invest part of their contributions outside the CPF board.

According to Ng (n.d), attributing Singapore's financial sector success to the CPF board's investment is erroneous. The author noted that CPF's contribution to social development, especially in housing and medical care, is enormous. However, the impact on the security market is less significant. The author argues that the policy of the CPF board to invest funds in SSGS limits the availability of funds for domestic investors. The policy also excludes a sizeable proportion of long-term domestic funds from the capital market. For instance, the IMF (2004) points out that CPF holds 70 percent of government bonds issued and that the government's unwillingness to issue more bonds hampers secondary market activities.

The CPF is a social fund with the primary aim to make individuals responsible for retirement and not to develop capital markets. As such, the scheme is under no obligation to generate competitive market returns for its account holders. That means transforming the CPF to search for higher returns through higher risk-taking is not a priority (Chan, Khai & Lim, 2016).

5.4.9 Conclusion

The contribution of CPF to Singapore's socio-economic development is indisputable. The success chocked in housing and health care delivery could not be obtained without the CPF (Ng, n.d). The CPF generates savings mobilization for retirement needs. The scheme is one of the oldest and best-developed national pension schemes in Asia. The CPF also ensured that Singaporeans became homeowners (Barrientos, 2002). The savings and insurance schemes in the CPF form an integral part of the country's health system, which has facilitated the provision of high-quality medical care. It is, therefore, no surprise that life expectancy at birth in Singapore is 85.2 years.

The administration of the CPF is by a well-constituted board established by statutory authority. The responsibilities of the board are; the safekeeping of contributions, administration of the scheme, receiving contributions and benefits payments. Despite the withdrawals from the OA and SA accounts, the periodic reviews by the CPF board ensure that the retirement needs of Singaporeans are met. The number of provisions embodied in the CPF makes the pension scheme popular among citizens. The pension system brought much economic and social relief to workers, and made positive impacts on families and the nation.

Notwithstanding these achievements, one challenge the CPF faces is the too many capital withdrawals before retirement occur. This situation leads to a liquidity crisis for many during retirement and consequently concerns about the adequacy of the pension income as Singaporeans live longer. As mentioned earlier, the government now provides incentives to employers in the form of grants to redesign jobs to suit the aged and adopt age-friendly workplace practices (World Economic Forum, 2017). According to Ramesh (2006), the deficiency of the CPF system is its weak pillar zero that protects those who are not covered by the arrangements of the other pillars. Recent reforms, such as the introduction of the SSS package, seek to address those challenges to eliminate extreme poverty among the aged (see section 5.4.6).

From the discussions, various lessons are learned from the Singaporean experience that will go a long way to guide Ghana and other developing nations (see Table 6.2 and appendix H).

5. 5 Summary of the main findings from the case studies

The case studies revealed insightful and informative lessons that can assist other countries on their road to the protection of the aged. A multi-pillar pension system as proposed by the World Bank is an essential point of departure. A state-funded Pillar-Zero for poor individuals is important to alleviate poverty. Pillar-One, is a DB scheme for formal sector employees and is financed on a PAYG basis with contributions from both employees and employers. The state is responsible for investment risks and other contingencies such as disability. Pillar-Two, on the other hand, is a mandatory funded DC plan that requires an own capitalization savings account that is privately managed. The scheme is targeted at formal employees (public or private) but is voluntary for self-employed and informal sector workers. The aim is to deliver a lump sum payment at retirement, but contributors bear investment risks. Pillar-Three, is a voluntary savings plan designed to provide a further savings option to contributors. The scheme is supplementary to the other pillars with similar risks as Pillar-Two. The flexibility of the voluntary pillar makes it suitable for the informal sector.

A question that could be raised is whether social issues such as health, housing, and education should be linked to the pension system. The biggest challenges of such an approach are demographic changes, fiscal viability, and institutional strength. A hybrid of policies is recommended to improve the pension systems of Ghana and other developing countries, especially in sub-Saharan Africa.

CHAPTER SIX

THE PENSION SYSTEM OF GHANA

6.1 Introduction

Ghana is a West African country bordered by the Atlantic Ocean at the south, Togo at the east, Cote d'Ivoire at the west, and Burkina Faso at the north. The country gained independence from British colonial rule in 1957 and has since 1992 maintained a constitutional presidential multiparty democracy with a four-year term, which is renewable for one additional term (Government of Ghana, 2018).

Ghana’s population has risen sharply from 6.7 million in 1960 to 31 million in 2020 (United Nations Population Prospects, 2020). As mentioned earlier, the elderly[14] population has also increased about seven-and-half times (770 percent) from 213,477 in 1960 to 1,643, 381 in 2010, constituting 6.7 percent of the total population compared to 4.5 percent in 1960. Following this trend, it is projected that Ghana’s elderly population will reach 2.5 million by 2025 and 6.3 million by 2050 (Ghana Statistical Service, 2013). The country has also experienced a constant decline in its total fertility rate; dropping from 6.75 in 1960 to 4.83 in 2000. The figure dropped further to 3.89 in 2020 which is still relatively high compared to developed countries. The country’s life expectancy increased from 50.03 in 1975 to 60.03 years in 2010. The 2020 estimate of the life expectancy is 64.9 years with 63.8 years for men and 66.1years for women (UN Population Prospects, 2020).

[14] The elderly in Ghana is defined as individuals who are 60 years and above. A citizen of Ghana is therefore eligible for pension at the age of 60 years.

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.

This chapter discusses the evolution of the pension system in Ghana from a traditional social protection system, the colonial system up to the present-day Three-Tier system. The chapter relies on evidence gathered from both secondary and primary data. The first is obtained by reviewing relevant literature and documents and the latter by conducting interviews. The Ghanaian pension system is also assessed with the aid of the World Bank multi-pillar pension evaluation criteria (see section 3.3.4.6). Evidence that emerged from these assessments is compared to a selection of other developing countries that have made remarkable strides in their pension system implementations (see section 5.1). This analysis may be useful for the betterment of conditions of retirees and improve the pension system of Ghana.

6.2 The Traditional Social Protection System

Ghana, like most developing nations, had a rich tradition of extended family and community provided social and economic support for its members. This provision took the form of food and financial support for the elderly, healthcare, and general communal help such as the teaching of moral values, gifts for newborn infants, and funeral finances. However, these practices are in decline lately due to social transformation because of urbanization, technological advancement, and globalization. Migration to urban areas in search of economic improvement, the pursuit of higher education, and a mere desire to live in cities have eroded the traditional social protection system. The family is now less capable and willing to provide social and economic relief to the vulnerable, especially the aged. This sharp deterioration in the traditional family system created the need for a more institutionalized social security system to protect the aged.

6.3 Pension in the Colonial Era

Kpessa (2010) indicates that the colonial administration introduced a pension programme to encourage loyalty, improve performance among colonial civil service workers, and ensure at least a basic pension during retirement. The retirement benefit was non-contributory and was considered a reward for diligent services rendered to the queen and colony. It also covered other public sector workers who complied with the loyalty criteria approved by the colonial administrators (Government of Ghana, 2006). Unfortunately, this income protection policy covered only urban workers who were mainly Europeans and a limited number of Africans (Asamoah & Nortey, 1987). Later, the colonial government enacted the Pension Ordinance of 1946 known as "CAP 30" to replace and merge the existing pensions into a single unified scheme that provided equal benefits to expatriates and local employees (Government of Ghana, 2006).

6.4 National Pension Scheme

The National Pension Scheme or CAP 30 is coined from Chapter 30 of the Pension Ordinance of 1946. Originally, the scheme was a non-contributory scheme for civil servants and armed forces personnel. Later, it was amended to a PAYG system, but the armed forces, police, and prisons service workers were not migrated because the government yielded to the pressure from union leaders who insisted to remain on the old non-contributory scheme. Other features of CAP 30 include:

- Public servants who have worked for ten continuous years were eligible for a full pension.
- Retirement age was 55 years and 45 years for voluntary retirement.
- One-eighth of the monthly final pension salary was paid to wives of men who have served for at least 60 months without a break.

- Survivor’s benefit at death before retirement was a lump sum payment of 20 times one-third of a worker’s full pension.
- Survivor’s benefit at death after retirement was a lump sum equal to the balance of unpaid pensions until 80 years. This is paid to the retiree’s next of kin.

Despite the flexible and attractive conditions under the CAP 30 pension scheme, one of its weaknesses was that a public servant who was sacked or fired loses all retirement benefits. This scheme posed a fiscal drain on the government budget due to its Defined Benefits and PAYG nature and therefore called for reform. In 1965, the immediate post-independence government introduced a Provident Fund scheme that covered other categories of workers such as the private sector which was not previously captured under the CAP 30 scheme (Kpessa, 2010).

6.5 Post-Independence Provident Fund

The Provident Fund scheme established in 1965 was an improved national pension scheme for public and private sector workers and alleviated the fiscal risks of a Defined Benefit system. It is a pension plan that pays contributors a lump sum financial benefit that accrues from membership contributions over some time and yields from the investment of funds (Dixon, 2000). Pension income under this system is determined by the size of accumulated pension contributions (Barr, 2002). One challenge of this system was that the returns generated from investment in government bonds were low.

To address some of the shortcomings of the Provident Fund scheme, especially regarding coverage and management, in 1972 a new Act was passed that led to the establishment of the Social Security and National Insurance Trust (SSNIT) as an independent corporate body aim to manage pension schemes in Ghana. Although SSNIT continued to operate as a Provident Fund scheme, it

provided compulsory coverage for workers in all establishments that employ at least five workers except for members of the Ghana Armed Forces, the Police and Prison Services, and senior staff of public universities and research institutions whom till date (2021) remain under the provisions of the non-contributory Cap 30. Membership was also opened to any firms with less than five employees to join the SSNIT scheme voluntarily.

A severe drought coupled with an economic downturn in the mid-1970s and 1982, led to the rise in the government budget deficit from 0.4 percent to 14.6 percent; income per capita dropped by 30 percent, and real wages by 80 percent (Boafo-Arthur, 2009). In 1983, these economic losses were accompanied by the highest inflation rate (122.8 percent) ever experienced by the nation (Dorkenoo, 2006). The economic instability during this period rendered the lump sum benefits paid to pensioners woefully inadequate. As a result, labour unions demanded that the provident funds change to a PAYG social insurance that pays regular monthly benefits or reinstatement of CAP 30 (Kpessa, 2010). These agitations led to the formation of a national Social Security Pension Scheme.

6.6 Social Security Pension Scheme

In February 1991, the government of Ghana replaced the Provident Fund scheme with the PAYG Social Security Pension Scheme that paid monthly annuities to pensioners until their death (Dei, 1997). To smoothen the transition process, individuals who were members of the Provident Fund scheme were automatically enrolled in the new social insurance scheme, and those who attained the retirement age were given the option to choose between monthly benefits or a lump sum payment (Dei, 1997). The scheme took into consideration three main contingencies: old age, invalidity, and survival benefits. Coverage under this scheme included private and self-employed workers, civil servants, and all other public sector employees who were employed from the 1st January 1972.

Contributions to the Social Security Pension Scheme consist of 5 percent of basic pre-tax salary from employees and 12.5 percent from employers, making a total contribution rate of 17.5 percent. The compulsory retirement age was 60 years while the voluntary retirement age was from 55 years. According to Kpessa (2010), employee's benefit under this scheme was based on 50 percent of the best three years' average salary. Any contribution to the scheme beyond 20 years (240 months) leads to an additional 1.5 percent increase in the benefits for every additional year up to a maximum pension benefit of 80 percent of the best three years' average salary. This implies that an employee who worked continuously for 40 years (480 months) stands to benefit most from this maximum provision.

A contributor who fails to meet the minimum requirement of 240 months before retirement (reduced pension) will receive accumulated contributions in addition to the interest calculated at half the rate of the government's treasury bills (Adjei, 2000 & Osei, 2005). At retirement, individuals are entitled to a 25 percent lump-sum payment paid at the present value discounted at the prevailing government of Ghana 91 Day Treasury Bill rate. The eligibility for disability benefits has a minimum requirement of 3 years contributions to the scheme and medical proof of the condition. Disability benefits are usually paid in monthly installments to the beneficiary with a lump sum payment to the next-of-kin if the insured person dies. According to Kumado and Gockel (2003), unlike the defunct CAP 30 that paid one-eighth of the monthly final pension to wives of men who served for at least 60 months without a break, the Social Security Pension Scheme does not make such provision (see section 6.4). However, the scheme pays a lump sum of 12 years monthly pension to the next of kin of a deceased member who has contributed at least 240 months. If an employee is deceased before the mandatory 240 monthly contribution baseline, the survivor(s) receive a lump sum benefit equivalent to 12 years pension proportional to the contributions made.

When a pensioner dies before age 72, the survivor(s) receive a balance of unpaid pension until age 72 of the deceased.

6.7 The need for reforms

The plight of the aged in Ghana required a significant improvement in pension income. This is because the previous pension regimes did not provide adequate retirement income for workers. The socio-cultural setting places responsibilities on older people who usually act as the head of the family and is the first point of call when family members need financial help, especially for funerals and other family engagements. These additional responsibilities make it difficult for the elderly to spend less during retirement. Public outcry about inadequacies of pensions to maintain a moderate living condition so far did not yield any meaningful results. The difference between pension schemes also raised concerns. Workers under the SSNIT pension scheme received lower pensions compared to their counterparts who were still members of the CAP 30 scheme. For example, security personnel in the Ghana armed forces, police, and prison service staff continued to enjoy a lump sum end of service benefit. Unfortunately, the Social Security Pension Schemes did not cover the informal sector, which employs over 80 percent of workers (National Pensions Act, 2008 -Act 766). These concerns led to protests by workers' unions and consequently the call that the pension level of CAP 30 is raised and the abolition of the SSNIT pension scheme. In 2004, the government of Ghana responded to these demands by initiating major pension reforms, which are discussed in the next section.

6.8 The Current Three-Tier Pension Scheme

In July 2004, the President of Ghana appointed a nine-member presidential commission to examine the existing pension schemes. The Commission submitted its final report to the government in March 2006. The main recommendation of the commission is the creation of a

new Three-Tier pension system consisting of three pillars; two mandatory and one voluntary pillar (see Table 6.1). The 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 DB and DC plans designed to generate better retirement benefits. Table 6.1 presents a summary of the Three-Tier pension system.

Table 6.1: 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 PAYG basis).	Formal sector workers. (Annuity payment)	11percent of 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 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: Author (2020)

It must be noted that for the Tier-One (DB) scheme, 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, adequacy becomes the sole responsibility of 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 level towards retirement. The details of the pension system are discussed in the following sections.

6.8.1 Tier-One

Tier-One is a mandatory contributory DB scheme designed strictly for formal sector workers under the management of Social Security and National Insurance Trust (SSNIT). The aim is to provide a basic monthly pension to workers in the formal sector. Contributions for Tier-One are fully tax-exempt and are finance by both employers and employees. Whiles the employer contributes 13 percent of the worker's monthly basic salary, the employee contributes 5.5 percent with a total contribution rate of 18.5 percent. Of the 18.5 percent, the employer remits 11 percent within 14 days of the ensuing month to SSNIT towards the employee's monthly pensions (Tier-One), 5 percent to designated private fund managers towards Tier-Two contribution, and 2.5 percent to National Health Insurance Scheme (NHIS), a contributory social health insurance scheme.

The Tier-One scheme requires workers to contribute for at least 180 months (15 years) to qualify for a full pension instead of 240 months under the previous pension Act 247. The scheme will only pay monthly benefits (no lump-sum payment) to employees upon retirement and is protected against inflation and market risks. A contributor who fails to meet the minimum 180 months before retirement will receive accumulated contributions plus interest calculated at 75 percent of the Government 91 Day Treasury Bill rate.

Calculation of employee benefits is based on the Pension Amendment Act 2014, Act 883. This Act stipulates that those who contributed for the minimum period of 15 years (180 months) are entitled to 37.5 percent pension right[15] times (average of the three best years' salary). Every additional twelve months contribution gives the member a 1.125 percent annual accrual rate up to a maximum of 60 percent. That means an employee who has worked continuously for 35 years (420 months) qualifies for the maximum provision. The scheme also pays a lump sum of 15 years monthly pension to the survivors of a deceased member who have made contributions for at least 180 months.

Similarly, if an employee is deceased before the mandatory 180 monthly contribution baseline, the survivor(s) will receive a lump sum benefit equivalent to 15 years final pension proportional to the contributions made. When a pensioner dies before age 75, the survivor(s) will receive the balance of unpaid pensions until the age 75 years of the deceased. Thus, a pension is guaranteed to be at least 75 years. However, a pensioner above 75 years continues to live on pension until death.

It is important to note that the 2014 Act 883 was an amendment to the 2008 Act 766. The amendment aims to achieve the following:

- To reduce the age exemption from 55 years to 50 years for those affected by Act 766 from its inception on January 1, 2010.
- To adjust the formula for the computation of pensions that is stated incorrectly in Act 766.
- To introduce an Emigration Benefit under Tier-One.

A non-Ghanaian member whose service ended and is leaving Ghana will receive whatever benefit is due to him/her, paid as a lump sum in Ghanaian currency. Act 883 stipulates that any

[15] A pension right is a credit earned for the number of months a member contributes to the scheme. A pension right under Pension Amendment Act 2014, Act 883 is calculated as 37.5 % + (Total number of months contributed-180) *0.09375%.

information that may be required from employers by fund managers (SSNIT) must be provided within seven (7) working days to ensure effective regulation.

6.8.2 Tier-Two

Tier-Two is a mandatory fully-funded occupational DC scheme that is privately managed with monthly contributions of 5 percent of the basic salary of all formal sector employees. This pillar aims to improve pensions by providing a supplementary lump-sum benefit to members upon retirement in addition to the monthly annuity that will be received from Tier-One. Contributions are fully tax-exempt thus; contributions are deducted from workers' monthly gross earnings before income tax. To boost pension income, cash withdrawals from this account are not allowed until retirement. Lump-sum benefits are paid to individuals upon retirement, and it comprises all contributions made to the scheme plus returns earned on the investment. If an employee is deceased before retirement, the next of kin will receive a lump sum benefit equivalent to the contributions made plus interest income from investment. This scheme is privately managed but regulated by the National Pensions Regulatory Authority (NPRA), the licensed service provider.

6.8.3 Tier-Three

Tier-Three is a voluntary or optional DC scheme consisting of two components; a voluntary provident fund for formal sector employees and a personal pension scheme targeted at informal workers and other individuals. Firstly, formal sector workers make voluntary savings to a provident fund scheme with a discretionary monthly contribution that varies among workers aside from the mandatory contributions made towards Tiers one and two. Although employers are not mandated to contribute towards the Tier-Three scheme, most employers do so to motivate workers to stay longer on the job and to reduce high labour turnover. However, the contribution rate may vary from one employer to another (Anku-Tsede, Ametorwu & Amankwa, 2014). Act 766 stipulates that

employers who contribute to Tier-Three are entitled to some tax benefits as these contributions are tax-exempt. Members of the Tier-Three scheme will receive a lump sum benefit upon termination of service, death, or retirement. Like Tier-Two, this scheme is also managed privately by approved pension fund managers and custodians licensed by the Security and Exchange Commission and registered with the NPRA.

This scheme gives contributors access to a maximum of 50 percent of contributions for specific needs. For example, contributors may use their share to purchase land, set up another business to generate extra income, fund their wards' higher education, and as collateral for a mortgage towards the acquisition of residential property before retirement. These may cushion members from the burden of financial constraints, indebtedness, rent payment and make way for a better financial preparation towards retirement. One other provision of this plan is that though contributors have access to their funds, any cash withdrawal before at least ten years of contribution attracts a 15 percent tax levy on the total sum withdrawn. In the same vein, termination of account before the tenth year of contribution will attract a tax rate of 15 percent of the accumulated savings. The intention is to discourage contributors from early withdrawal so that they can build up sufficient funds. Cash withdrawal from the fund is tax-free after ten years.

According to *National Pension Act 2008* (Ghana), the second component of the voluntary plan: personal pension scheme is more focused on workers in the informal sector who constitute about 80 percent of the Ghanaian working population who are not covered by a pension scheme. Secondly, the personal pension scheme aims to provide additional cover to individuals who want to make voluntary contributions to enhance their pension benefits beyond the mandatory first and second Tier schemes and any provident fund scheme. Contributors to this scheme will have two separate accounts; the retirement account that will provide benefits on retirement and a personal savings

account with rules for withdrawals (set by the fund holders) before retirement. Unlike the provident fund scheme, withdrawals from the personal pension accounts are tax-exempt. Implying that informal workers can make pension contributions without worrying about how much the government will deduct from their hard-earned savings. This provision serves as an incentive to contributors and a morale booster for more workers to enroll. The scheme pays a lump sum benefit upon termination of service or death. It is important to add that informal workers in Ghana do not pay personal income tax. This is so because their activities are not regulated, and they hardly keep records of their earnings which are often irregular. However, they pay tolls or obtain business operating permits for a specified period depending on the nature of the job.

6.9 Challenges experienced by the Three-Tier pension reforms

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

6.9.1 Assets/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 (Aflo, 2020). Unfortunately, the initial statements released by the Bank of Ghana on the computation of principals and the accrued interests lacked transparency and were inaccurate as employers and employees found errors in the computation. In addition, there were allegations leveled against the Acting CEO of NPRA for making unapproved withdrawals from the TPFA (Okine, 2012). This lack of transparency contravenes pension supervision principle 9 stipulated in the International

Organization of Pension Supervisors (IOPS, 2010). Consequently, there was a public outcry and calls for immediate transfer of the fund to the various licensed trustees.

The public agitation worsened when the Minister for Works and Housing in 2018 hinted that the government is considering lending pension funds in the custody of the Bank of Ghana to the various metropolitan, municipal and district assemblies to build infrastructure and tenantable apartments for rent. According to the Minister, income generated from this investment would be used for repayment of the loan, and this would relieve the central government from its overstretched financial burden. However, this proposal received fierce opposition from the public, especially workers, because of the lack of financial transparency that engulfed the past state housing transactions. The housing deficit in Ghana currently stands at 1.7 million units. Addressing this deficit requires a minimum annual delivery of about 85,000 housing units over the next 20 years (Centre for Affordable Housing Finance in Africa, 2018).

Eventually, in June 2018, the Bank of Ghana completed the transfer of the first tranche of funds in the TPFA to the private trustees, which had already been ready to receive funds since November 2012. This delay implies that until 2018, workers who migrated to the new pension system and had retired since 2011 did not receive their lump sum benefits. Plans to transfer the last tranche are yet to yield any results. In a forum on pensions in Ghana on September 23, 2020, the Trades Union Congress (TUC) and other labour unions passed a resolution calling on the government to take immediate steps to release the Temporary Pension Fund Account locked up at the Bank of Ghana (Baah, 2020). This unnecessary delay had dire consequences on retirement income and the growth of investment portfolios.

Another issue of concern is the management of SSNIT's physical assets such as real estate, hospitals, guest houses, and banks. The collapse of the Social Security Bank and the sale of most of

SSNIT's residential flats raised concerns (a *comment from an interviewee of this study*). The pertinent question is, to what extent are pensioners benefitting from these assets? Another respondent had these to say:

> *"The administrative costs of pension are consuming most of the investment returns. They pay themselves so high to the detriment of contributors. Our Social Security Bank has been sold due to poor management and supervision, causing delays in pension payments. Pension funds should be invested in profitable ventures to the benefit of pensioners".*

Effective supervision and investment management control is required for asset performance. Fund management board should have a complete stakeholder representation.

6.9.2 Supervision

Principle 2 of the IOPS requires that pension supervision authorities have operational independence and that the Chief Executive Officers (CEOs) be appointed or removed through explicit procedures with transparent mechanisms (IOPS, 2010). The NPRA failed to comply with this provision. In the past ten (10) years, the regulator has had six different CEOs, implying that on average, each CEO stayed in office for less than two (2) years. The reasons for this are political interference, misappropriation of funds, and lack of transparent operations. These frequent changes did not promote the stability of the NPRA because each CEO assumed duty with a different management style and strategy. In some instances, the formation of the governing board, which is the highest decision-making body, was fraught with long delays. This situation undermined the credibility of the pension system in the eyes of contributors, especially in a system where coverage is low (see section 6.9.3), thus hampered the smooth progress of work by the regulator.

Another recommendation by IOPS (2010) about pension supervision states that pension authorities should follow a suitable risk assessment methodology and techniques of supervision to

deal with market exposures. According to IOPS (2010), risk-based supervision requires ample data collection and management that makes relevant forecasting as well as effective decision making. Unfortunately, the NPRA does not have such a robust risk-based supervision system. A key challenge for the regulator is the unavailability of data. According to Okine (2012), two years after the commencement of the new pension scheme, a third-party service provider tasked with the responsibility of providing and managing data of Tier-Two contributions did not have any records due to weak supervision. This constitutes a violation of an essential component of pension system supervision. What made matters worse was the inability of NPRA to provide proof of how funds paid into the TPFA were invested (Okine, 2012). Ensuring and enforcing employers to comply with industry regulations alone is not enough to cushion the industry against market shocks. It is expected that by moving towards risk-based pension supervision, NPRA must establish a functional research unit that will generate adequate data needed for effective supervision that meets international standards.

The NPRA also faces problems of limited internet access and inadequate national presence. The responsibilities of NPRA require that it exercises effective and efficient supervisory roles on pension matters nationwide. But since the implementation of the new pension reforms, the NPRA has created only four (4) functional zonal offices; one at the southern sector (Takoradi), two at the middle belt (Kumasi and Sunyani), and only one in the northern regions (Tamale). Given the wide geographical spread of workers and new businesses nationwide, the limited presence of the regulator in other districts may impede the efficient performance of the organization. However, a nationwide representation can increase the cost of pension administration dramatically with eventual negative consequences. In this regard, decisions on nationwide expansion must be taken with circumspection, bearing in mind the ultimate beneficiaries of the system are pensioners.

The continuous existence of other parallel pension schemes in Ghana for some selected public sector workers is another area of concern, which also contravenes the Act that established the new pension reforms. According to *National Pension Act 2008* (Ghana), within five years of the implementation of the reforms, parallel pension schemes (CAP 30) such as those for 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 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.

Regrettably, the president of Ghana, Nana Addo Dankwa Akuffo-Addo in his State of the Nations Address on January 5, 2021, reiterated the government's decision to exclude all security agencies from pension unification. This statement is an affirmation that these agencies would continue to be on the non-contributory CAP 30 scheme. In reaction to this announcement, the Trades Union Congress issued a press release cautioning the government not to carry on with such a discriminatory pension policy (Baah, 2021). According to the union, this approach can be criticized on several points. Firstly, such a decision undermines the solidarity principle that serves as the main guiding principle for the pension reform initiative. Secondly, the decision also violates the principle of equality of treatment in employment as specified in the ILO convention 111, which was ratified in 1961 by Ghana. Thirdly, it entrenches a class system in pension administration where workers under the new contributory Three-Tier schemes receive less pension benefits than those who do not contribute towards their pensions under the CAP 30 scheme. The union called on the government to convene a stakeholder consultation forum to discuss this issue and other relevant matters affecting the pension industry. Failure by the government will leave TUC with no other option than to refer

the problem to the ILO (Baah, 2021). A retired police officer has this to say in an interview conducted for this study, highlighting some of the problem areas of the pension system:

> *"My pension income as compared to others is more reasonable because we the security forces get a higher lump-sum under CAP 30 scheme. The pension is not enough to protect the aged from falling into poverty especially, those who are not on CAP 30. If I were younger, I would have saved more before retirement so that I can get more to supplement my pension. I suggest that government should increase pension allowance, place much emphasis on pensioners' access to decent accommodation which is key in the pensioner's life and also to prioritize retirees' healthcare".*

Lastly, the pension reforms have brought competition to the pension industry. The new schemes came with the establishment of private trustees, fund managers, and custodians. The responsibility of these companies is to manage the Private Pillars. Owing to the portability clause enshrined in the Pension Act (Act 766), employers may select their service providers and port their funds to different trustees at will. This aimed to put employees in a better position to enjoy higher returns on their investments. Unfortunately, it has been observed that trustees are reluctant to report recalcitrant employers who fail to remit the total contribution of workers within the regulated time to the NPRA due to a fear of losing clients to competitors (Attah-Krufi, 2020). This unfortunate development may hamper the smooth operations and supervision by the regulator. Since employers may not always act in the best interest of employees, decisions on selecting service providers should involve both parties.

6.9.3 Coverage

According to the government of Ghana (2006), in 1991 when the Social Security Pension Scheme started, the total number of active members was 647,712. Active membership rose to 1, 274,114 (96.71 percent) by the end of 2016 (SSNIT annual report, 2016). 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 active workforce in Ghana is about 15.2 million, and 85 percent are employed in the informal sector (Ghana population census, 2010). The National Pension Regulatory Authority (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 enrollment, this figure is far below expectations and inconsistent with efforts of securing an improved retirement income for workers in the informal sector. This finding confirms an earlier study by Amartey-Vondee (2015) that pointed out that the Ghanaian pension system faces challenges such as limited coverage, inadequate attention to the informal sector, compliance issues, and inadequate public education on the need and operation of the system. The finding also aligns with Dorfman (2015), which asserted that insufficient coverage of pension schemes is a challenge in South Saharan Africa. According to Dorfman (2015), pension systems struggled to cover the informal sector and payroll-tax financed pensions remained largely irrelevant to most people in the

region. The main reason for the poor pension coverage is that most workers are employed in the informal or the agriculture sector, with low and intermittent income (Dorfman, 2015).

This problem becomes worse because the income of the informal sector workers is uncertain and sometimes depends on market and weather conditions and the month or season of the year. The informal worker is firstly concerned about job stability, and secondly whether pension contributions are affordable. According to Anders (2017), getting people enrolled into a pension programme is not the problem, "people are concerned about their pension because they have seen older people suffered without a pension". But the real challenge is, once someone is registered, how do you get that person to save consistently? How do you convince people living on irregular income to investments on a regular (monthly) basis? Given the economic circumstances of informal workers, a possible solution is to have a system that allows for irregular contributions, since an inadequate pension is better than absolutely no pension.

Another factor militating against pension coverage in the informal sector 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. For instance, the Bank of Ghana closed seven banks during the 2017 to 2018 banking sector clean-up exercise (Nyalatorgbi, 2018). This preceded the collapse of 23 savings and loans and 370 microfinance institutions (Arku, 2019; Fiifi, 2020). In 2019, the security and exchange commission also closed 53 investment companies (Frimpong, 2019). As an interviewed respondent indicates:

> *"Tier-Three is good, it can help workers save more to avoid the financial problems we are facing now on retirement. However, the private investment companies are disincentives to*

investment in the country. Recently, I believe you heard how people lost their money through fraudulent investment schemes. So people are scared and skeptical to invest in pension schemes managed by private companies. I mentioned Tier-Three to my son but he told me he is afraid. Security and Exchange Commission should not only be warning investors about the existence of such schemes but rise to their regulatory duties".

Although savings with licensed financial institutions are guaranteed by the Bank of Ghana, this is not the case for savings with unregistered financial institutions. It is therefore imperative for the Central Bank to strengthen its supervision network to clamp down on such unscrupulous private institutions to improve the plight of the aged in the informal sector. It also calls for innovative measures to build confidence in the reliability of pension funds invested in private companies.

Anders (2017) proposed that, to ensure transparency and to provide regular updates to contributors, pension infrastructure should rely on text message technology rather than internet access, which is not so easily accessible for many individuals. He based his argument on the fact that most Ghanaians have access to mobile phones that can be used as tools to send reminder notices, do mobile money transfers, and hold mobile accounts. Anders (2017) further indicates that these initiatives have been adopted by some private trustees operating within the informal sector. Examples include the People's Pension Trust, the Daakye Pension Trust, and the United Pension Trustees. These strategies have been introduced to the market in 2017 and seem to be making some progress in the informal pension market (Guven, 2019). Potential customers now have easy access to sign-up services, deposit making, withdrawal of funds, checking of balances, and seeking support. According to Guven (2019), no matter how positive these results of private firms appear to be, their longer-term viability is not assured due to the unstable nature of informal sector jobs. It

can therefore be argued that the insecurity of funds, irregular income, and future of service providers are major disincentives for individuals to participate in pension programmes.

To extend pension coverage further to the informal sector, in 2018 the government of Ghana in its budget announced its intention to establish the Cocoa Farmers Pension Scheme (Ghana Government Budget, 2018). The scheme will be a hybrid of the privately managed mandatory and voluntary pension schemes that will be jointly sponsored by the government and the Ghana Cocoa Board. The scheme targets around 850,000 cocoa farmers in the country who are all informal sector workers. When launched, the scheme is expected to provide cocoa farmers with lump-sum pensions and short-term financial assistance under certain defined conditions yet to be published (Guven, 2019). It is hoped that this plan will materialize and not just be a cheap promise to score political points.

Furthermore, developing well-supervised voluntary (third pillar) schemes may effectively supplement the low pension of informal workers at retirement (World Bank, 2005a).

6.9.4 Education and Awareness

Educating the public on the Three-Tier pension reforms has been poor (Darko, 2016). 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 claim is corroborated by an interviewed respondent who indicates that:

> *"The awareness level of workers about the new pension system is low. The situation is worse with the youth. They do not have access to pension education and training. I advise that state institutions like Social Security and National Insurance Trust and National*

Commission for Civic Education and local churches take up the responsibility to educate the youth and create more awareness towards pensions. I believe that the salary will never be enough for anybody, but once you are determined to save, you will save".

Darko (2016) indicates that workers did not understand their pension rights, the linkage of the various Tiers, and the general operations of the scheme. This problem is not limited to public sector workers only. It is also argued that informal sector workers who constitute over 80 percent of the Ghanaian labour force did not understand how the new pension system works and the provisions in the scheme that provide coverage to them (Kpessa, 2011). This shows again that information and education are still lacking.

For any contributory pension scheme, especially in the case of voluntary pillars, a clear understanding of the system is required to attract people's attention and to convince them to enroll. Requesting individuals to make contributions regularly requires commitment based on a thorough awareness and comprehension of the issues involved. The limited knowledge of the Three-Tier scheme in Ghana partly explains the low participant rate. This situation may impede the socio-economic progress of the nation and can perpetuate old-age income insecurity, which is at variance with the goals of the reform.

6.10 Assessment of the pension reforms

The assessment of Ghana's Three-Tier pension reforms is based on pension evaluation criteria proposed by the World Bank (2005a). These criteria are discussed in the next sections.

6.10.1 Sustainability

The SSNIT pension scheme undergoes periodic actuarial evaluation to determine the financial sustainability of the scheme. The results of such evaluation vary over time. For example, the 2004 actuarial report projected that at a two percentage point return on investment and a three percentage

point annual increase in coverage, the scheme could be sustainable for a fifty-year (2004-2054) period (Kpessa, 2010). Notwithstanding this projection, the 2011 actuarial report revealed that the scheme (Tier-One) faced long-term sustainability constraints and should reach its equilibrium in 2018 (Kwabla-King, 2017). This means that with the current rate of contributions, the cost of benefits payment and administrative expenses are projected to exceed income from contributions and investment after 2018. However, it is difficult to validate this claim since the institution must still conduct its actuarial evaluation for 2020.

Meanwhile, the last available actuarial report published in SSNIT Annual Report 2016 indicates that the SSNIT pension scheme is not financially sustainable for the period to 2064. According to this report, "given the applicable financial rules, demographic and economic environment in which the scheme operates, the current assets together with the future contributions of members will not be sufficient to pay all future benefits, administrative and operational expenses over the period covered by the projection" (SSNIT Annual Report, 2016). 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). 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 evade contributions, and measures to maintain a clean pension register to prevent payments to non-existing retirees. Because of this sustainability threat, revamping the pension system becomes essential (see next chapter).

6.10.2 Adequacy

As discussed in the previous chapter, pension adequacy can be determined by the income replacement rate (IRR), which is the ratio of retirement income to pre-retirement earnings. The OECD (2017) proposed an average IRR of 72 percent to ensure a moderate living standard. Ghana's new pension reforms pegged the IRR at a minimum of 37.5 percent for 180 months (15 years) contribution and a maximum of 60 percent for 420 months (35 years) contribution. These rates are lower than the minimum of 50 percent and a maximum of 80 percent of the previous scheme because it is expected that the lump sum benefits from the mandatory Tier-Two and the voluntary Tier should raise the total retirement benefits.

The practicality of the computation formula of the new pension reforms is put to test 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 are disgruntled about the benefits they received and called for immediate changes in the computation formula. The September 23, 2020 edition of the Daily Graphic 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 from this year under the new Ghanaian pensions Act 2008 (Act 766). It was the stance of the labour union that the government topped up the shortage on pensioners' past credits[16] and second Tier contributions computed under the new law".

According to the general secretary of the TUC, it cannot be justified that the retirees of 2020 be paid amounts far lower than what they would have received under the previous PNDC Law 247. He

[16] The past credit is the contribution of workers to Social Security and National Insurance Trust whose retirement took place ten (10) years after the New Pension Act 766 came into force.

gave examples of members who have retired in 2020 and received lower lump sums compared to their juniors in the same organisations who retired in 2019, under the defunct PNDC Law 247 (Baah, 2021). The TUC, therefore, demands that the amortisation method used in calculating workers' lump sum pensions be replaced with PNDC Law 247 to calculate retirees' lump-sum payments to improve pensioners' position. They requested that newly retirees who are worse off in 2020 must be duly compensated (Ibid). The government promised to compensate those affected although this will increase the fiscal liabilities of the government. An affected respondent has made the following remark in an interview conducted for this study:

> *"Unfortunately for me, despite the government's promised 10-day duration, it has been three (3) months now; I have not received my lump-sum pension payment although I have completed all the necessary documentation. I followed up to my workplace but to no avail. I feel it will even be worse for other pensioners in institutions that do not have fund managers and whose funds are still in the custody of government. CAP 30 is available for Senior University staff only and does not extend to us as junior staff".*

Given the evidence emanating from this first batch of beneficiaries, the TUC observed that workers retiring in 2020 have become victims of the pension system reform that promised better retirement income but delivered worse outcomes than its predecessor. The conditions in the new pension reforms raise insecurity for pensioners compared to the old system. These matters require prompt attention from government and pension managers to ensure that the goal of pension adequacy is achieved.

Another factor that explains the inadequacy of pensions in Ghana is that low salaried individuals find it difficult to make contributions or extend contributions to the voluntary pillar to improve their pension income. Earnings of workers are crucial in pension design as it influences

decisions on contribution payment, finance, and adequacy (Turner, 1996). According to a statement by the Director of SSNIT in November 2020, 50 percent of pension fund contributors earned less than GH¢ 1,100 (US$ 196.43) a month, about 35 percent earned less than Gh¢ 700 (US$ 125) and only 5 percent or less earn GH¢ 5000 (US$ 892.86) or more a month (Ofori-Tenkorang, 2020). Interviews conducted for this study revealed that due to the generally low salaries, pensioners without supplementary pension provisions usually fall into poverty. An eighty-year-old respondent for this study indicates that:

> *"Pensioners' financial conditions are bad. I have invested in cocoa farming in the village. If I am to depend on the pension alone, my living condition would have been miserable. I do not consider pensions as a way of eliminating elderly poverty because the amount is too low and cannot sustain the livelihood of retirees specially, in urban areas such as Accra. If I were younger, I would have invested more in farming and other businesses to live better during retirement. Increasing the retirement age does not matter; it is saving towards retirement that is important".*
>
> *Another respondent, a 75 years old female retiree remarked; "It is not easy for many pensioners at all! Some do not have any business or work aside from their meagre pension. I will say the money is too low. Depending on the pension pay alone will be difficult. I am currently engaged in some petty trading to supplement my pension. The major problem is that pensions receive is not enough, and this has made living condition unbearable. Even though the government does annual increments, the impact is insignificant due to high cost of living".*

This finding is consistent with the results of Dorfman (2015) on pension system adequacy in Sub-Saharan Africa. According to Dorfman (2015), pensions in the sub-region are inadequate, especially

for workers with no supplementary pension provision, who represent the large majority of the labour force. On average, most workers in the sub-region have a relatively short contribution history and thus end up with low retirement benefits.

In contrast, Ashaley (2012) asserts that the mandatory pension system in Ghana provides adequate pensions to beneficiaries. His conclusion raises questions because his finding is not supported by any existing technique for measuring pension adequacy (see section 2.4.1).

According to the statement of the Director-General of SSNIT in November 2020, the pension income workers receive at retirement reflects the level of their salaries. Low earnings results in low contributions and finally to low pension income since the computation of pension correlates with salaries (Ofori-Tenkorang, 2020). The situation 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 a 4.5 percent unemployment rate in 2020, which is a drop from 10.2 percent in 2015 (Ghana Statistical Service, 2015 & World Data Atlas, 2020).

Another emerging trend in Ghana is that due to the high unemployment rates, employers have resorted to offering jobs on a part-time basis and renew such contracts upon expiry. Others also employ National Service[17] personnel and yearly request a fresh batch. By using these tactics employers avoid the mandatory contribution toward the worker's pension to decrease operational

[17] Ghana's National Service Scheme is a one-year mandatory employment programme for all tertiary graduates under the age of 40. Participants receive a monthly allowance, which does not attract any pension contributions. These graduates are posted to work in public or private sector organisations.

costs. This development can have a dire consequence on pensions and therefore needs urgent redress. One could argue that pension contributions should be paid no matter the type of employment, whether full-time/part-time or permanent/temporary.

6.10.3 Affordability

The discussion so far has shown that pensions in Ghana are not financed by the government through taxation, and no government support is provided to the poor elderly. Since the 1970s Ghana's macroeconomic and fiscal position has been uncertain. Despite the economic reform agenda pursued to achieve fiscal stability, it failed to yield many 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 to $US8.36 billion in 2010. In 2020, the figure escalated to $US 42.16 billion (IndexMundi, 2020). The Debt-GDP ratio rose from 16.58 in 2008 to 39.22 in 2016. It increased further to 70.12 in 2020. The continuous depreciation of the cedi led to a deteriorating currency value from US$ 1.00: GH¢1.00 in 2008 to $US 1.00: GH¢5.62 in 2020. The situation is not better from a foreign trade perspective. The trade deficit was -$US5.6 billion in 2015 but reduced to -$US3.08 billion and -$US 0.75 billion in 2016 and 2018 respectively (West Midlands Pension Fund, 2020). The annual average inflation rates fluctuate and are relatively high. The rates were 17.45, 12.37, and 7.18 in 2016, 2017, and 2019 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.

Participation in the mandatory Tier-One scheme requires a 13 percent contribution from the employer with only 5.5 percent from the employee (National Pension Act 2008, Act 766). One way to make pension contributions affordable to private sector employers and prevent them from shifting to appointing contract workers and national service personnel may be to make the contributions of both employers and employees the same. This implies reducing the employers' share of contribution and raising the employees'. It would also mean that the general low salary structure of workers needs attention, possibly through minimum wage legislation, after taking all the possible negative implications into account.

Participation in Tier-Two is mandatory, and workers must contribute monthly. Tier-Three is voluntary, and participation and contributions are at the discretion of contributors. This freedom of choice does not counter the problem of myopia[18], which puts retirement income security at risk (Kpessa, 2011). This Tier is designed to provide coverage to informal sector workers who constitute the majority of Ghanaian workers whose incomes are generally low. The flexibility of this scheme inhibits participation, and as a result, adequate coverage suffers.

Another concern is that there are no limitations on the charges providers can levy to cover their administration and operation costs. This is problematic because service providers are at liberty to deduct any amount to meet management costs. The situation becomes worse when contributions are relatively low and irregular.

6.10.4 Equitability

Government should promote equity by ensuring a minimum pension to low-income earners financed through progressive income taxes to improve old age income security. Obviously, the

[18] 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.

absence of a universal pension scheme coupled with low coverage does not promote equity and indicates that old-age poverty is still predominant in Ghana. As mentioned earlier, those who receive pensions are the few employed in the formal sectors of the economy. The voluntary scheme that makes provision for workers in the informal sector where most Ghanaians work, has not been well communicated, and inadequate information has been made available (Darko, 2016). It can therefore be inferred that the Ghanaian pension system does not promote equity, therefore the government will have to reconsider social pensions without disregarding its fiscal position. This matter is highlighted by a remark by a 62-year-old interviewee:

> *"A few pensioners are okay, but the majority especially those who retire in lower rank jobs are living in very poor conditions. I think it is so because the pension payments are too low and woefully inadequate. My lump sum as a retired basic school teacher was not more than GH¢6000 (US$ 1,071.43), and my monthly pension is GH¢375 (US$66.96). The health insurance policy we have from SSNIT does not cover a lot of critical and expensive ailments and so that is not very convenient. Though the initial idea behind pension scheme is to alleviate poverty among retired persons in society, in my opinion, this agenda has failed due to poor management".*

6.10.5 Predictability

A predictable pension scheme specifies how benefits are determined. The system protects contributors from the negative effect of inflation before retirement and automatically indexed benefits during retirement (World Bank, 2005a). This is particularly a characteristic of defined benefit schemes. Benefit calculation under the first pillar of Ghana's pension reform is well spelled out and is predictable. As discussed earlier, an employee's benefit computation is determined by provisions in the 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. As indicated in section 6.10.5, this method of benefits computation differs from the old system. But there are questions about the accuracy of its calculation.

As a defined benefit scheme, the retirement benefits of Tier-One are indexed for inflation. However, for the privately managed DC Tiers, there is no protection against capital loss. Benefits depend on investment returns and the value of contributions. Most custodians try to guard against inflation by investing in equities on the stock market. Other categories of investments include government stocks, bonds, residential and commercial properties, loans, and short-term cash deposits (SSNIT Annual report, 2016).

6.10.6 Robustness

According to Kpessa (2011), there are threats to retirement income security in Ghana. The author opines that 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 that may come from market failures or defaults by services providers. By design, access to private schemes is not restricted, and workers can make their own choices. There are, therefore, inherent risks for contributors.

In Ghana, the inflation rate fluctuates and is usually relatively high but appears to be decreasing in recent years. The annual averaged rates were 17.45, 12.37, and 7.18 in 2016, 2017, and 2019 respectively. There is also a high possibility for investor fraud. As mentioned earlier, the safety of invested funds in private institutions and companies is a major concern for many investors in Ghana. That is because investors in recent years suffered from financial improprieties. Some

individuals have lost their investments through fraudulent investment schemes and insolvent financial institutions (see section 6.9.3). Compelling workers to invest their retirement incomes in the private financial market that is weakly supervised is a risky venture, which exposes the aged to retirement income security risks.

Although the National Pensions Regulatory Authority (NPRA) is mandated by law to supervise all pension activities in Ghana, the institution is plagued with challenges. Chief among them is the frequent change of CEOs. The reason for this is largely political interference, misappropriation of funds, and lack of transparent operations (see section 6.9.2). These frequent changes did not help the course of NPRA because each CEO came to the office with a different management style and strategy.

6.10.7 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 have a negative impact on employment because it leads to higher costs of labour. To mitigate this cost, some employers have channeled 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 (see section 6.10.2).

6.10.8 Contributions to savings mobilization and financial market development

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.

As part of the SSNIT's investment policy objectives, the scheme expects to achieve a Real Return on Investments (RROI) of at least 3.25 percent per annum. The investment portfolio of the fund is divided between equities, fixed income, and alternative investments such as investment in properties (residential and non-residential) and loans, the latter constitutes 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.

6.11 BRIEF SUMMARY OF THE RESULTS OF FIELD INTERVIEWS

6.11.1 Introduction

To supplement the evidence gathered from the literature and documents, telephone interviews were conducted with selected pensioners and pension fund managers in Ghana (see interview guide, Appendices A & B). Ten pensioners and ten pension fund managers participated in the interviews

(see sections 4.7.1.2 & 4.7.1.4). The pensioners ranged in age from 61 to 80 years, and they worked between 20 to 44 years before retirement. The work experience of the fund managers interviewed ranged from 6 to 15 years. Sections 6.11.2 and 6.11.3 present a summary of the salient information obtained from pensioners and pension fund managers respectively. As could be expected the responses did not provide startling new insights, however, they reemphasize some of the issues highlighted from the theory, documents, and literature.

6.11.2 Responses from Pensioners

Important concerns raised by most of the interviewees:

All ten respondents indicated that the level of pensions is too low, leaving most of the pensioners in poverty. One remarked: *"If I am to depend on the pension alone, my living condition would have been miserable" (Respondent number 4, November, 2020).*

Another major concern of all the interviewees is the unavailability of decent and affordable residential accommodation facilities for pensioners. An interviewee remarked: *"SSNIT should invest in affordable residential accommodation that will benefit contributors rather than investing in hotels" (Respondent number 7, November, 2020)*

All interviewees expressed concern about the improper functioning of the National Health Insurance Scheme (NHIS) providing limited services, which has been incorporated in the pension scheme (see section 6.8.1).

Other Challenges reported by pensioners are:

- Four of the participants mentioned poor supervision and management, leading to delays in processing pension payments to new retirees. A respondent commented that "the *collapsed of Social Security Bank and Merchant Bank owned by SSNIT are typical examples of SSNIT's mismanagement of pensioners resources"* (see section 6.9.2).

- A participant also mentioned cumbersome bureaucratic administrative processes leading to long delays in pension payments, especially for new retirees.
- One participant mentioned high administrative costs concerning staff remuneration. He asked*: "How can the CEO of SSNIT earn (Gh¢ 75,000) more than the president of the country?* (see section 6.9.2).
- The two Cap 30 pension recipients are more satisfied than beneficiaries of the Three-Tier pension scheme (see section 6.9.2).
- Six participants indicated that they did not contribute to the voluntary pension scheme because of a lack of confidence in the financial sector due to investor fraud (see section 6.9.3).
- Seven participants did not properly understand the components of the voluntary scheme, while the other three retired before the introduction of the voluntary scheme (see section 6.9.4).

As part of the interview process, respondents were given the opportunity to advice their compatriots regarding pension decisions. Their responses are discussed next.

General advice interviewees would give to their compatriots:

- All ten respondents warned against early retirement especially if workers did not make adequate financial savings or have a vibrant business to depend on during old age.
- Start early in your career to save and invest for your retirement, this is very important for all young workers (all ten participants).
- Workers must plan their families carefully to prevent expenditures on education to occur during retirement (five participants).

- Workers are encouraged to pay their pension contributions regularly no matter the level of their income. One interviewee remarked: *“every worker must contribute to a pension since half a loaf is better than none”*.
- Two participants expressed the wish that the employment situation in the country should improve to allow people to engage in multiple jobs, this would alleviate the low salary problems and would be reflected positively on pension income.
- The NHIS for pensioners should extend its coverage of more diseases to assist pensioners (all 10 participants).
- Pension funds should be managed well and invest in more profitable ventures that will benefit retirees (eight participants).
- Workers must plan to have extra income to supplement their pension due to unforeseen circumstances (all 10 participants)
- Supervision and control of the financial sector should be improved to allay workers’ fears to participate in voluntary private pension schemes (six participants).
- Education and publicity of the components of the voluntary pension scheme should be improved (seven participants).
- SSNIT and Government should collaborate to provide affordable housing to pensioners (all ten participants).
- Annual pension increments (indexation) should reflect the prevailing economic conditions in the country (nine participants).
- SSNIT should reduce the high administrative cost by regulating the emoluments of its workers (one participant).

- Pensioners should be represented on National Pension's Board to ensure their concerns receive attention (one participant).
- The government as an employer should remit its share of contribution to SSNIT timely and regularly to ease part of SSNIT's problems (one participant).
- Government should strengthen the effort to unify all parallel schemes as enshrined in the pension Act 766 to avoid discrimination (two participants).
- Fund management boards should follow the pension computation formula strictly and apply it carefully (one participant)
- Government should give certain incentives to pensioners such as subsidized utility bills and public transport fares (one participant).
- Responses on increase in the retirement age are mixed. Of the four respondents who were against it, one expressed concern about the high youth unemployment in the country. Another indicates that productivity reduces after 60 years due to deteriorating health. Whilst one of them sarcastically asked, *"If you couldn't plan your income towards retirement by age 60 years, what can you do thereafter?"* This is obviously a debatable issue.

6.11.3 Responses from Pension Fund Managers

- The Ghanaian pension system lacks any provision to protect the low-income group.
- Benefits are adjusted upwards annually depending on the inflation rate, however, the impact of these adjustments is insignificant due to the low levels of pensions.
- The financial markets in Ghana are small and less developed compared to advanced countries such as the United Kingdom.
- The capital market in Ghana is volatile due to fluctuating interest and inflation rates and as a result, has little foreign participation.

- A further problem of financial markets in Ghana is the late (2012) licensing of credit rating agencies, which are yet to gain public and corporate recognition. The knowledge about the credit worthiness of fund custodians indicates the probability of security of funds held by these agencies. This can inform the decision of potential contributors to voluntary private pension schemes.
- There exists legislation to prosecute recalcitrant employers who evade contributions.
- There are monitoring measures to maintain a clean pension register to prevent payments to non-existing retirees.
- Pension funds are invested only in domestic financial markets. The investment portfolio of the fund is divided into equities, fixed income, and alternative investments such as investment in residential and non-residential properties and loans.
- NPRA and SSNIT have strategized to revamp its public education to enroll more members and to strengthen their supervisory role to clamp down on recalcitrant and defaulting employers. This should raise contributions and make the system sustainable.
- Life expectancy is gradually rising, implying a rise in pension expenditure but no decision has been taken yet about increasing the retirement age.
- Myopia is the main challenge that limits the participation rate.
- Tiers two and three have brought new private fund management institutions, which have enhanced savings mobilization and created many jobs.

6.12 A COMPARISON OF GHANA'S PENSION SYSTEM TO SINGAPORE, CHILE AND MAURITIUS

6.12.1 Introduction

This section compares the Ghanaian pension system to those of Singapore, Chile, and Mauritius (discussed in the previous chapter). The comparative analysis is based on the World Bank multi-pillar pension systems evaluation criteria.

6.12.2 Comparison of pension systems of some selected countries

Table 6.2 below compares the different strategies adopted by some selected countries to mitigate the challenges confronting their pension systems.

Table 6.2: 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 enroll in the CPF. 3. There exist effective electronic payment systems. 4. Government tops up for those with low CPF Life account.	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.
	1. There exists a social assistance or redistributive pillar 2. Extension of retirement age from	1. There exists a redistributive pillar. 2. Extension of retirement age:	1. A universal cash transfer exists. 2. Extension of retirement age	1. Absence of a redistributive pillar 2. Introduction of privately

Adequacy	62 to 75 years. 3. Inter-generational transfer of income to poorer households 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.	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.	from 60-65 years for both men and women.	managed Tiers.
Sustainability	1. Introduction of CPF Life scheme 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 into a special long-term securities guaranteed by government.	1. Lowering of replacement rate. But this policy compromises adequacy. 2. There is no restriction on working beyond the stipulated retirement age.	1. Increased retirement age from 60 to 65 years. 2. Downward adjustment of computation formula.	1. Legislation to prosecute recalcitrant employers who evade contributions. 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 so as 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 in accordance with the total sum contributed plus interest earnings.	1. Benefit formula exists for those who opt for monthly annuity.	1. A clearly defined payment procedures exist.	1. Pension right is clearly spelt 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	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.

	with AAA credit rating. 4. The SSGS investment earns a risk-free interest rate of up to 6 percent per annum.			
Minimization of labour market distortions	1. Incentives are available for the elderly to continue working 2. The first S$60,000 for every CPF accounts holder attracts 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 the 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-finance "CAP 30" for the security forces and some selected public sector workers.

Source: Author (2021)

In Table 6.2, the pension systems of the respective countries were compared. The next sections discuss the indicators in detail.

6.12.2.1 Increasing participation rate

One of the criteria to measure a pension system's success is the extent of pension coverage for workers. According to Koh (2014), a good pension system should cover all workers. Ghana's pension system has achieved only about 10.53 percent national coverage (see Table 6.2).

In contrast, Singapore which operates a DC pension system has a striking record of 94.1 percent participation rate (Asher, 2013). The design of Singapore's CPF system ensures that almost every worker in the labour market is covered. In addition, the CPF board ensures that premiums are kept at relatively low levels.

Although Singaporeans are higher on the development spectrum than Ghana, similar policies could improve Ghana's DC (Tier-Three) scheme and could raise the low pension participation rate. Ghanaian workers must receive adequate education about the current pension system. The details of the voluntary scheme should also be propagated to the workforce, especially the informal workers.

A trusted fund management institution similar to the Singaporean CPF Board (probably SSNIT) could be given the responsibility to annuitize the voluntary contributions of informal workers to ensure a regular pension instead of a lump-sum benefit. Those with lower savings could receive a top-up from the government to warrant annuity payments, depending on the government's fiscal capacity. This policy may be possible if other parallel non-contributory schemes (eg. CAP 30) are unified to enable a top-up for low-income members. Such a policy should improve coverage as well as secure a minimum pension for the elderly.

Under Ghana's current pension system, no law compels informal workers to enroll in a pension plan. This is a drawback and calls for immediate action if pension coverage is to be enhanced. Although it is mandatory for some businesses to register, enforcement is weak. Moreover, business registration is not tied to pension participation, as is the case in Singapore. Therefore, a person can register a business but may not participate in a pension scheme.

Chile on the other hand has achieved national pension coverage of 71 percent. This achievement is mainly due to the introduction of a solidarity pillar in the 2008 pension system reforms

(Association of AFPs, 2015). Two separate plans were designed to address the problem of low coverage and inadequacy (see section 5.2.7).

Another policy from the Chilean system that requires attention is the provision of a pension subsidy to enhance participation among young workers between 18 and 25 years old. Ghana's pension system does not have any additional incentives to encourage new entrants into the labour market to participate. Following the Chilean example should reduce the problem of myopia and improve pension coverage.

Mauritius has achieved total pension coverage (100 percent) for all workers. However, Mauritius is a small country with a total population of only 1.265 million in 2019, of which the aged 65 years and above constitutes 17.4 percent of the population (the Republic of Mauritius, 2019). Extending universal pension coverage to a relatively small population is less complicated and more manageable compared to a country such as Ghana with a population about 24.5 times bigger. The rising life expectancy in Mauritius from 63.0 to 74.4 years for 1969 and 2018 respectively could be a threat to the long-term sustainability of the universal pension scheme.

Ghana's economy has been inundated with fiscal instability; therefore, adopting Mauritius's universal pension scheme under the present fiscal conditions may create challenges. Ghana's external debt stock has been rising from $US 7.34 billion in 2005 to $US8.36 billion in 2010. In 2020, the figure escalated to $US 42.16 billion (IndexMundi, 2020). The Debt-GDP ratio rose from 16.58 in 2008 to 39.22 in 2016 and had increased further to 70.12 in 2020 (see section 6.10.3). Against the present macroeconomic background of Ghana, it could be argued that Ghana does not have the fiscal capacity to adopt a universal pension scheme. For this reason, alternative means (mentioned earlier) should be pursued to improve participation.

6.12.2.2 Enhancing pension adequacy

Pensions received by Ghanaians are low and inadequate. A well-supervised voluntary scheme (Tier-Three) may effectively serve as a means to supplement low pensions at retirement.

The Singaporean DC system has introduced measures to address the inadequate pension problems. For example, special old-age employment credit is granted to employers to redesign jobs for the aged and adopt age-friendly workplace practices (see section 5.4.8). The compulsory retirement age in Ghana is 60 years for both men and women. There are no formal provisions for re-engagement after this age, except in cases where workers with special expertise get their employments renewed annually on a contractual basis until 65 years when such engagements are terminated. Emulating the Singaporean example by increasing the retirement age and keeping workers longer in the job market by providing incentives to both employees and employers may go a long way to improve retirement income. Policies aimed to encourage workers to postpone retirement and employers to re-engage elderly workers are necessary and practical ways of enhancing pension adequacy.

Pensions in Chile are inadequate partly due to no contributions made by employers and the low amount paid by the redistributive pillar. However, the proposed pension reforms in Chile have made room for these deficits (see section 5.2.14). Although both employers and employees contribute to pensions in Ghana, the outcome is inadequate due to a weak labour market and short contribution histories. Economic reform to improve employment is necessary. Depending on the fiscal scope, the government should consider the introduction of a non-contributory pension scheme that can provide a basic pension to the aged poor.

6.12.2.3 Overcoming sustainability threats

Ghana's pension system faces a sustainability threat (see section 6.10.1). To address the problem of an aging population and sustainability, Singapore introduced a CPF Life scheme, which is a national annuity scheme that provides a life-long retirement income security to the aged instead of a lump-sum payment as was done previously (see Table 6.2). According to Whitehouse (2014), the age for pension eligibility should depend on life expectancy. Ghana's population is gradually aging together with a low pension participation rate. Measures such as those adopted by Singapore should be considered.

In 2018 the government of Mauritius increased the retirement age from 60 to 65 years and decreased the price index of the National Pension Scheme. Although these actions aimed to address the sustainability problems, they turn to lower the replacement ratio that leads to inadequate pensions. Ideally, pension benefits should rather be adjusted in line with price increases to maintain the living standards of beneficiaries.

In the same vein, in Chile, adequacy is also sacrificed for sustainability. The pension management body (AFP) lowers the replacement rate to make the scheme sustainable. Only workers contribute towards pensions in Chile, and a present plan to involve employers and government in pension contributions in Chile is in an advanced stage (see section 5.2.14).

6.12.2.4 Ensuring an equitable pension system

An equitable pension system requires the channeling of some income from wealthy individuals to the poor to promote social fairness (World Bank, 2005a). Unfortunately, the Ghanaian pension system does not have a redistributive pillar.

Singapore has policies enshrined in the CPF aimed at decreasing income inequality (Phang, 2001). For example, the government performs a top-up to enable members with low income to

enroll in a CPF Life to earn a life annuity. In addition, there exists a non-contributory Silver Support Scheme to supplement incomes for retired Singaporeans who are above 65 years, and also, the Ordinary Account of the CPF allows for intergenerational income transfer to poorer household members.

6.12.2.5 Affordability of pension contributions

Pensions in Ghana are not financed by the government through taxation due to fiscal challenges (see sections 6.10.3 and 6.12.2.1). Tiers one and two are mandatory and cover only formal sector workers whereas the Tier-Three scheme is voluntary. A concern with the latter is that service providers can deduct any amount to cover the operational cost. This freedom of choice is problematic, especially when contributions are relatively low and irregular; as a result, adequate coverage suffers.

Singapore's DC plan is affordable. The government's supervisory body, the CPF Board that doubles as the administrator of CPF Life, ensures that premiums are maintained at relatively low levels. There are no limitations to the CPF Life premium. This implies that members with low savings in their retirement accounts can still participate because government tops up the difference to make such individuals eligible. These provisions make the pension system affordable and flexible.

Workers in Chile are solely responsible for their pension contributions (see section 5.2.8). In addition, high administrative fees due to a limited number of fund administrators (AFPs) have encouraged evasion, especially among the self-employed. Chile has indicated its plans to increase the number of AFPs to ensure healthy competition among fund administrators that can eventually lower administrative fees.

Guven and Leite (2016) identified fiscal affordability of the Mauritian BRP scheme as a major challenge. At the 2008 OECD/IOPS Global Forum on Private Pensions, it was disclosed that the high administrative cost of private pensions in Mauritius and other sub-Saharan African countries are passed on to contributors. In addition, the World Bank (2015) projects that with the significant changes in the demography and declining tax revenue, the Mauritian government may not have the required financial resources to pay for the basic universal pension. The government of Mauritius has adjusted the computation formula to make the redistributive pillar fiscally more affordable at the expense of pension adequacy.

6.12.2.6 Ensuring predictability

According to the World Bank (2005a), predictability means that: firstly, there is a legal benefit formula upon which computations are based as arbitrary determination of benefits infringes on the transparency and predictability of the system. Secondly, the formula in the DB system is designed to protect individual contributors against price fluctuations. Likewise, the investment policy in the DC system may protect individuals against market volatility prior to retirement.

Ghana's DB plan has a benefit formula and is predictable. However, Whitehouse (2014) argues that the 'final' salary measure used for benefits determination is open for strategic manipulation by contributors and can be costly to manage. For example, workers may wait for the last three years before retirement to increase their contributions. It may be a good idea for countries to move towards lifetime average salary calculations of benefits rather than 'final' or 'best three years average salary. With regards to the voluntary pillar, most custodians guard against inflation risks by investing in the stock market or other categories of investments such as government stocks, bonds, residential and commercial properties, loans, and short-term cash deposits (SSNIT Annual report, 2016).

Chile operates a DC pension scheme. Although annuitization is not mandatory, almost 60 percent of retirees choose annuities (Iglesias-Palau, 2009). Retirees have the option to use the capital accumulated to buy an immediate life annuity or to receive temporary income with a deferred life annuity, or to take a total lump sum (see section 5.2.13.5). However, the management body (AFP) has been accused of lowering the replacement rate. The redistributive components of the scheme have also been indexed against inflation.

In Mauritius, there is a clearly defined payment procedure for the non-contributory BRP. The benefits of BRP and CSPS are indexed against inflation. While a formula exists, it was not strictly followed (World Bank, 2014). The formula can be revised bearing in mind the simultaneous impact on the national budget and the plight of the aged poor. The Mauritius DC National Savings Fund pays a lump sum benefit at retirement determined by the contribution history and yields from investments subject to a "no-capital loss" guarantee.

Singapore's CPF benefits are shared according to the total sum contributed by members and interest earnings from investments. Except for special cases, where the contributors cannot meet the Basic Retirement Sum due to low-income levels, the government tops up the difference to meet the requirement for a life annuity.

6.12.2.7 Enhancing robustness

A robust pension system refers to the ability to withstand major economic, demographic and political shocks. According to Kpessa (2011), old age insecurity occurs in Ghana. The author opines that the voluntary Tier has no robust mechanisms to protect members against market shocks. That indicates that there is an inherent risk for contributors (see section 6.10.6). The rising elderly population coupled with the gradual rise in life expectancy has implications for old age income

security and pensions received by retirees. Unfortunately, Ghana's pension reforms in 2008 did not take demographic transformation into account.

Singapore incorporated measures into the CPF system to enhance its robustness (see Table 6.2). These include the introduction of a CPF Life to annuitize the DC system, legislation for citizens to work up to 75 years, a special employment credit for employers who employ persons above 55 years, and investing CPF funds in Special Government Securities, which are bonds issued with AAA credit rating. These measures make the Singaporean pension system resilient, and similar strategies could be adopted by Ghana and other developing countries encountering the challenges of longevity and investment risks.

To address demographic aging in Chile, retirees are allowed to work for so long as they want. Contributors are also involved in the investment decisions to raise their confidence in the pension system. Fund managers provide five types of investment options. The multi-fund investment system offers contributors the opportunity to pursue higher returns (see table 5.1). Regrettably, the investment of pension funds in Ghana is shrouded in secrecy without members' involvement. The transparency offered by the multi-fund investment system in Chile should be considered. This could enhance confidence where confidence in the Ghana financial sector has dwindled due to investor fraud.

Fall and Bloch (2014) observed that the aging population and the reduction in the fertility rate in Mauritius put the financial stability of its pension system at risk and make it more vulnerable to economic or political shocks. To address this problem the government in 2018 increased the retirement age from 60 to 65 years to enable pension funds to meet the demands of an aging population. However, the limitations of weak supervision, lack of sound institutional quality, and an unregulated environment for the private voluntary pillars work against the system (World Bank,

2014). Guven and Leite (2016) suggested that Mauritius' pension funds should be invested in credible financial market instruments such as corporate securities and foreign assets to improve investment returns. The Singapore system where funds are invested in special government securities with AAA-rated bonds is a suitable example to emulate.

6.12.2.8 Minimization of labour market distortions

The Ghana labour market treats both men and women equally. Similarly, men and women have the same retirement age fixed at 60 years. Although it can be argued that the new schemes have helped to create new jobs, it is essential to mention that the financial contributions made by employers have a negative impact on employment because it leads to higher costs of labour (see section 6.10.2). Furthermore, Ghana's pension system also has a special non-contributory scheme benefitting selected groups of public sector workers such as the security services, which leads to unfair treatment of workers.

In Chile, the introduction of a redistributive pillar led to a relatively small reduction of 0.4 percent for formal labor market participation for workers above 40 years (Attanasio, Meghir & Otero, 2011). Chile has balanced the effects of the redistributive pillars and contributory pillars on the labour market by granting a pension subsidy to younger workers between 18 to 25 years.

The Chilean pension system also encourages gender inequality. Differences exist in the level of pensions and the age of retirement for men and women. Women usually have unequal access to jobs and earnings, which translates into low pension benefits (Bertranou, 2016). Men retire at age 65 and women at 60 years, implying that women have early access to their AFP accounts than men (Association of AFPs, 2015).

Ironically, the Chilean military regime that implemented the AFP system excluded itself mainly for political and financial reasons, with their pensions totally financed by the central government

budget (Rodrigo & Augusto, 2001). Such discrimination creates labor unrest and inequality and must be discouraged.

The labour force of Mauritius is covered by three different pension types; a universal pension scheme, a PAYG system for civil servants, and a fully-funded private scheme. Employees of the public sector and those of the private sector are covered by different pension schemes. The former is covered by the PAYG system, while the latter is a fully funded scheme. Those who did not participate in the labour market are covered by the universal pension pillar when they meet the eligibility criteria. This discrimination contributes to labour supply challenges as workers usually prefer public sector jobs to private-sector jobs (Deerpalsing, 2004).

The CPF in Singapore does not discriminate among workers. Incentives are given to the elderly to continue working to enhance their retirement income. For example, special employment credits of up to 8 percentage point of wage offsets are given to employers who employ persons older than 55 years. Also, the introduction of a 1 percentage point additional interest on the first S$ 60,000 of CPF members' accounts by the government serves as an incentive for individuals to work longer to improve their retirement account. A study by Chen and Tan (2018) concluded that the non-contributory Silver Support Scheme (SSS) introduced in 2016 in Singapore to the aged 65 years and over did not reduce labour supply.

Singapore also operates a separate Provident Fund scheme for Armed Forces Personnel (Asher, 1999), but unlike Ghana's CAP 30 (parallel scheme for the security forces) which is purely tax-financed, the Singaporean Provident Fund receives funding from three sources: thus, the government's consolidated revenue account, mandatory contributions from personnel and investment income of the scheme (see section 5.4.7).

6.12.2.9 Adequate Supervision

According to Kay (2003), the effective functioning of pension systems, especially funded pensions depends on adequate regulations and supervision by institutions that can ensure that management and investment guidelines are duly followed (see section 2.2.3). OECD/IOPS (2017) proposed that pension system supervisors should enhance consumer protection through fraud detection, provide enough information and financial education, and ensure that service providers comply with standards and regulations (a preventive rather than corrective supervisory approach).

The failure to provide adequate oversight responsibilities may have far-reaching consequences for pension performance. An example is a 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). As mentioned earlier, Mauritius' private voluntary pension pillar is poorly regulated, funds are managed by employers, and benefit preferences are unknown. According to Guven and Leite (2016), risk-based supervision is lacking in the Mauritian BRP and the NPF. The system lacks; accurate data on the elderly, autonomous fund administrators, and an independent governing board responsible for fund and asset management. The World Bank (2015) argues that the real challenge for the Mauritius pension system is supervision lapses and a lack of sound institutional quality (see section 5.3.7).

Weak supervision is a problem confronting the Ghanaian pension system. The regulator NPRA had frequent changes of CEO. The NPRA does not have risk-based supervision that requires accurate data on the elderly, and management that makes relevant forecasting and effective decisions. Interviewees also mentioned poor supervision and management as the cause for delays in processing pension payments of new retirees. Supervision lapses also contributed to little financial

education, and consequently to high levels of myopia among the working youth (see sections 6.9.2 and 7.2.3).

The OECD/IOPS (2017) guideline for transparency in dealing with pension benefits, costs and charges, and investment returns is weakly enforced in Chile. A major concern for Chile is the high administrative fees charged and the limited number (six) of AFPs (Bradley, 2016). This erodes confidence and trust in the system leading to evasion especially by low-income earners.

Singapore's economic and social successes are also reflected in the achievements of the CPF which is well-supervised and regulated by the governing CPF Board (see section 5.4.2). (Ng, n.d) argues that the impact of the CPF scheme on Singapore's economic development is unequivocal and that without the CPF, capital mobilization for the massive public housing project would not have been possible. According to Loke (2009), the overwhelming popularity the CPF has gained among Singaporeans is due to the relief the system brought to workers and the positive impact it has on family life and the nation at large.

The provisions in the CPF have contributed to the following remarkable outcomes: In 2020, Singapore's pension system ranked globally 7th with a score of 71.2 percent (Mercer, 2021), and globally, Singapore ranked 4th in homeownership with 87.9 percent of the population covered (Statista. 2020). The economic and social success of Singapore is something that other countries could strive to replicate. According to OECD (2015), the "Edusave Scheme" in the CPF OA account contributed partly to Singapore's high educational achievements. The country ranks high in the United Nations' Human Development Index, which measures the performance of education and health, as well as the level of economic development. In 2014, Singapore ranked 11th globally, and 1st in Asia (see section 5.4.8.4). In 2015, Singapore ranked 1st among 72 countries in the OECD's Programme for International Student Assessment (PISA) test (OECD, 2015). According to the

World Bank Human Capital Index (2018), Singapore ranks the highest in the world from a total of 157 economies with a score of 88 percent.

To conclude, effective supervision is critical to the realization of the goals of retirement income security.

6.13 Conclusion

The needs of pension systems vary among countries due to the type of system adopted and the economic, demographic, and political environment. The aim of a pension system is to maintain at least a moderate living standard for retirees that often require policy changes to improve the system. Ghana has a Three-Tier pension system. Whereas Tiers one and two are mandatory for all formal sector workers, Tier-Three is voluntary and targets mainly informal sector workers. Tier-One is under the management of SSNIT, and Tiers two and three are managed by private institutions. Funds are invested in equities, government and corporate bonds, treasury bills, properties, and other investment alternatives. The pension system is regulated and supervised by the NPRA and is required to meet the standards of the International Organisation of Pension Supervisors (see section 6.9.2). This study reveals the following issues about the Ghanaian pension system:

- The participation rate is low due to inadequate financial education.
- Pensions are inadequate.
- There exists a sustainability threat.
- There are equity concerns due to the absence of a redistributive pillar.
- Prevalence of myopia.
- Inadequate supervision.
- There is a lack of confidence in the financial sector.
- There is discrimination in pension types and pensions received by public sector workers.

- The share of employers' contributions is not affordable.
- There are delays in the processing of benefits, especially for new retirees.
- Pension funds are invested in domestic financial markets only.
- The capital market is small and volatile.
- The general public is not well-informed about the components of the pension system, especially about the voluntary Tier-Three.
- The present system, however, does not create much of a fiscal burden.
- A predictable benefit computation formula exists for the DB plan.
- The population is experiencing a gradual rise in life expectancy that increases pension expenditure if the retirement age is not changed.

Singapore, Chile, and Mauritius have developed policies to address similar challenges that are faced by Ghana. Adopting some of the policies such as increasing the retirement age, setting pension premiums relatively low, adopting the multi-fund investment policy, annuitizing all or part of the voluntary contribution, and adopting electronic contribution methods and payment systems could improve Ghana's pension system (see Table 6.2). It is argued that effective supervision is essential to the success of pension systems.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATION

7.1 Introduction

Given the critical roles pensions play to maintain the livings 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 Ghanaian pension system complies with the World Bank's multi-pillar pension evaluation framework. A comparative study was also done by focusing on the pension system of countries such as Chile, Mauritius, and Singapore. Telephonic interviews were also conducted with pensioners in Ghana and personnel in the Ghanaian pension industry. The approach followed enabled an investigation of the performance of a pension system about maintaining the living standards of people in retirement and the reform needs of the pension system. This is done to answer the research question:

How does the Ghanaian pension system conform to the recommendations of the World Bank's multi-pillar pension evaluation model?

This chapter presents the main conclusions and recommendations.

7.2 Addressing Research Aim and Objectives

In chapter one the aim of the study is formulated as:

"To perform an economic analysis of the Ghanaian pension system making use of a comparative study, taking the World Bank multi-pillar pension evaluation model as a point of departure".

The objectives and the findings are discussed in the following sections.

7.2.1 ***Objective 1: To determine whether Ghana's pension system conforms to the recommendations of the World Bank.***

Ghana's 2008 pension Act (Act, 766) has led to a multi-pillar pension system consisting of three Tiers. Tiers one and two are mandatory for all formal sector workers, while Tier-Three is voluntary and targets mainly informal sector workers. These Tiers are designed to provide income security to pensioners. The World Bank's (2005) multi-pillar pension evaluation criteria are used to assess Ghana's pension system reforms, and the following conclusions are reached:

The sustainability of pension systems requires a sound financial grounding that can be maintained for a long period. The research finds that Ghana's pension system faces a sustainability threat. The current assets and future contributions will not cover future benefits, administrative, and operational expenses. This finding aligns with the results of Allianz Global Investors (2011) which concluded that nations with poor fiscal and economic outlook are liable to be confronted with challenges of pensions sustainability as discussed in section 2.4.3.1

Equitability refers to the ability of the government to promote equity by ensuring a minimum pension to low-income earners through tax finance. Ghana's pension system does not have a redistributive pillar and therefore does not promote equity. The pension system in Ghana is neither universal nor possesses a government-support Pillar or safety net for poor elderly individuals.

The predictability of a pension system requires that a clearly defined benefit formula is enshrined in the pension scheme. Ghana's pension system concurs with this requirement. The benefit calculation for the first pillar is well-defined and is predictable. For the privately managed Pillars, benefits depend on investment returns and the value of contributions.

The affordability requires that the pension system must be within the financing capacity of individuals and the nation and must not impose a fiscal burden on the government. Pensions in Ghana are not financed through taxation and are not affordable to private-sector employers. This

can be deduced from the finding that some employers have shifted more towards allowances to reduce workers' basic salary, used for the computation of pension.

The robustness refers to the ability of the pension system to withstand major economic, demographic and political shocks. Interviewees mentioned a high possibility of investment risks due to investment fraud and bankruptcy. They also revealed that the safety of invested funds in private firms is a major concern. Another challenge is the gradual rise in life expectancy that increases pension expenditure if the retirement age is not changed. The voluntary pillar does not have the resilience to withstand economic and political shocks since contributors are largely informal workers with low levels of income.

The minimization of labour market distortion is another requirement of a well-functioning and robust pension system. This research concludes that the direct labour market impacts of Ghana's pension system are mixed. With the introduction of two additional Tiers, new jobs have been created. However, the pension contributions employers pay have led to higher costs of labour. As a result, some employers deliberately appoint contract workers and National Service Personnel instead of permanent workers. This development has negative implications on pension membership.

The contribution to savings mobilization and financial market development of pensions constitute a positive externality that boosts economic growth. This study reveals that the new Pillars in Ghana's pension reforms have contributed to output growth. The value of investment assets under pension management has also increased substantially. Nevertheless, the retention of contributions of Tier-Two funds by the Bank of Ghana at the onset of the reform deprived the financial firms of the opportunity to invest such funds in a diversified and lucrative manner.

Interviews conducted confirmed that pension funds are only invested in domestic financial markets and that the investment portfolio of these funds is divided into equities, fixed income, investment in residential and non-residential properties, and loans. The pension funds are therefore not allowed to invest in external markets that may enhance returns and security. The size of the financial markets in Ghana is relatively small and volatile due to fluctuating interest and inflation rates.

7.2.2 Objective 2: To ascertain the adequacy or not of pension funds to beneficiaries

Adequacy refers to whether the pension system provides sufficient benefits to all retirees and prevents them from falling into poverty. Evidence gathered indicates that the pensions provided to Ghanaians are woefully inadequate. This is due to:

- Low levels of income.
- Relatively short periods of contributions.
- The absence of a redistributive pillar.
- Prevalence of myopia.
- Hiring and salary payment strategies to limit employers' share of contribution.
- Lack of confidence in the financial sector due to investor fraud.

These results are similar to those of Dorfman (2015) who studied the patterns and challenges of pensions in Sub-Saharan Africa and indicated that pension systems in the sub-region are largely confronted with the challenge of adequacy (see section 2.4.1). Most workers in the sub-region on average have a short contribution history and thus end up with low pension benefits.

As mentioned earlier, the main shortcoming of the Ghanaian pension system is that it does not have a redistributive pillar to protect low-income earners. All these factors contribute to the low retirement income received by pensioners.

7.2.3 Objective 3: To explore the challenges of pension system implementation in Ghana.

A pension system is effective if the goals of saving, equity, and insurance are achieved simultaneously (World Bank; 1994). Failure to obtain these goals indicates malfunctioning of the pension system. Unfortunately, this was underexplored during the reforms of Ghana's pension system. This study identified the following main challenges of the Ghanaian pension system:

- Inadequate pensions
- Low participation rates
- Myopia
- Improper fund management
- Weak supervision
- Limited information about the pension system
- Labour market distortions
- Unaffordable system to private employers
- Lack of confidence in the financial sector due to investor fraud.

These issues are briefly discussed next.

A good pension system should cover all workers (Koh, 2014). But this study revealed that pension participation rates are very low in Ghana. This discovery is not different from those of Dorfman (2015) who studied the patterns of pension challenges in Sub Saharan Africa and observed that insufficient coverage is one of the biggest challenges. That is due to the existence of a large informal sector, which is inadequately covered. Secondly, most of the informal workers are self-employed, with low and intermittent income. Thirdly, some formal sector workers are not covered due to hiring strategies adopted by some employers. Lastly, the perception about the safety of invested funds in private firms militates against adequate coverage.

Myopia refers to labour supply and savings decisions by younger individuals that underestimate the implications of postponing savings because retirement is regarded as something far in the future. Perceiving pensions in this way limits longer and regular contributions and enrollment to pension schemes. Interviewees have identified a lack of foresight towards retirement preparations by young workers as an important issue since this leads to low and insufficient retirement income.

The next challenge is the improper management of funds and limitations in financial control. To date (2021), 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. The government has proposed to invest these funds in tenantable apartments for renting to reduce the housing deficits facing the country. This delay implies that workers who have retired since the reforms or are due for retirement soon will be deprived of their full lump sum benefits.

The failure to provide adequate oversight responsibilities may have far-reaching consequences for pension performance (Vittas, 2003). Weak supervision is another problem confronting the Ghanaian pension system. This is because:

- The regulator NPRA had to battle with frequent changes of CEO. The reason for this is mainly political interference and a lack of transparent operations that undermine the credibility of the system.
- The NPRA does not have a robust risk-based supervision system as prescribed by IOPS. Risk-based supervision requires ample and accurate data on the elderly and management that makes relevant forecasting and effective decisions.

- The NPRA has an inadequate presence in the country however, it must be noted that a nationwide presence will lead to higher administrative costs.
- The failure by NPRA to unify other parallel pension schemes such as CAP 30 is a major concern and violates the Act that established the new pension reforms.
- Trustees are reluctant to report recalcitrant employers who fail to remit the total contribution of workers within the regulated time frame to the NPRA, due to the fear of losing clients to competitors.
- Lastly, respondents mentioned poor supervision and management as the cause for delays in processing pension payments of new retirees.

These findings correspond with Vittas (2003). He found that as a result of inadequate supervision and institutional lapses, a time deposit of MUR 500 million of Mauritius' NPS could not be traced by the Mauritius Commercial Bank.

Another constraint of Ghana's pension system is limited information. According to Darko (2016), one major challenge faced by the new pension reforms in Ghana is inadequate information and knowledge by the public on the different components of the scheme. It is evident from interview participants that adequate information is lacking about the two new Pillars. Workers are not well-informed about the system, the linkage among the various Pillars, and the benefits they stand to derive. Specifically, they did not understand the components and the requirements of the voluntary Pillar. Respondents indicate that most workers do not have access to pension education and training.

Although it can be argued that the new schemes have helped to create new jobs, it is essential to mention that the system creates distortions in the labour market. Financial contributions by employers have a negative impact on employment because it leads to higher costs of labour.

Therefore, employers have adopted hiring and salary payment strategies to limit their share of contribution.

Lastly, the study revealed that workers lack confidence in the financial sector due to investor fraud. Investors doubt the safety of invested funds in the hands of private institutions and companies who manage the newly introduced Pillars. These institutions are perceived as risky because many have suffered financial improprieties and have lost their investments through unregulated and fraudulent investment schemes.

7.2.3.1 Other challenges facing pensioners as indicated by interviewees are:

- A lack of decent and affordable residential accommodation facilities for pensioners.
- The improper functioning and limited disease coverage of the National Health Insurance Scheme (NHIS) that has been incorporated in the pension scheme.
- Bureaucratic and administrative bottlenecks leading to long delays in pension payments, especially for new retirees.
- An annual pension increment that does not reflect the prevailing economic conditions in the country.
- The absence of pensioners' representatives on the National Pension's Board.
- There is no provision in the pension Act to allow retirees to continue working.

7.2.4 Objective 4: Lessons learned from pension systems of some selected developing countries

A comparative study of the pension systems of Chile, Mauritius and Singapore revealed lessons that can be emulated by Ghana and other developing nations to improve their pension systems. These are summarised in the next sections.

7.2.4.1 Improving participation rate

The CPF board of Singapore ensures that premiums are kept at relatively low levels and is flexible to assist low-income earners to enroll. Business registration is compulsorily linked to pension participation. There also exist effective electronic payment systems to encourage participation. A policy of Chile worth noting is the provision of a pension subsidy to enhance participation among young workers aged 18 and 25 years. Chile, Singapore, and Mauritius have a means-tested redistributive pillar to maintain a minimum living standard for the poor aged and provide coverage to other individuals who do not contribute to a pension scheme. Education and awareness creation about the benefits of participation in the pension plan is also widespread in all these countries.

7.2.4.2 Enhancing pension adequacy

Singapore has introduced policies to address the problems associated with inadequate pensions. These include the granting of special old-age employment credit to employers to create jobs for the aged and adopt old age-friendly workplace practices, an extension of retirement age from 62 to 75 years, and the provision of incentives for a deferred pension.

Even though Chile has increased the retirement age from 60 to 65 years for men and 55 to 60 years for women, workers can continue working after reaching this age. Secondly, proposals in consideration by Chile are: to adopt a tripartite model of pensions, provide incentives to workers who defer pensions, and resolve the imbalance in pension benefits between men and women. Similarly, Mauritius has also extended the retirement age from 60-65 years for both sexes.

7.2.4.3 Overcoming sustainability threats

Singapore has introduced a CPF Life scheme that converted the DC pension scheme to a national annuity scheme. This scheme provides a life-long retirement income security to the aged instead of lump-sum benefits. Other measures to promote sustainability adopted by Singapore include:

- Pension education and strategy to increase membership.
- An incentive of a 7 percent rise in payouts for each year deferred above 65 years.
- Investing CPF Life funds into special long-term securities guaranteed by the government earn a risk-free interest rate of up to 6 percent per annum. The aim is to rebuild confidence in the state-run scheme.
- CPF members also have the discretion to choose when benefits payments should commence once they become eligible at 65 years.

In Chile and Mauritius, adequacy is sacrificed for sustainability. The pension management bodies lowered the replacement rate to ensure the sustainability of the schemes. It is important to note that the raising of retirement ages by these countries has a simultaneous impact on improving adequacy, sustainability, and robustness.

7.2.4.4 Ensuring an equitable pension system

The redistributive pillar of the pension systems of Chile, Mauritius, and Singapore enhances equity. Furthermore, Singapore has other policies aimed at decreasing income inequality among the aged as follows:

- The government performs a top-up to enable members who earn low income to enrol in a CPF Life to receive a life annuity.
- There is a non-contributory Silver Support Scheme to supplement incomes for retired citizens above 65 years with low pensions.
- The intergenerational income transfer by fund holders to poorer household members aims to improve equity.

7.2.4.5 Making pension contributions affordable

Singapore sets no limit on premiums for CPF Life. The flexible amount is to encourage participation and to make the system affordable for low-income individuals. Members with lower savings in their retirement accounts may participate because government tops up the difference to make such individuals eligible. In Chile, administrative fees tend to be higher due to a limited number of fund administrators. That has encouraged evasion especially, among the self-employed. Chile's proposed pension system reform presently under consideration wants to correct these challenges. The fiscal affordability of Mauritius' universal pension scheme hangs. Consequently, the government adjusted the computation formula to make the redistributive pillar affordable at the expense of pension adequacy.

7.2.4.6 Ensuring predictability

In Singapore and Chile, pension benefits are calculated by the total sum contributed by members and interest earnings from investments. Benefit formulae exist, and a monthly annuity is compulsory for contributors in Singapore but optional in Chile. Both systems also have clearly defined payment procedures for the non-contributory schemes. Mauritius has a formula for the DB scheme but is not strictly followed due to budget constraints. However, the DC scheme pays a lump sum benefit at retirement based on the contribution history and the interest earned from investments subject to a "no-capital loss" guarantee.

7.2.4.7 Enhancing robustness

Singapore, Chile, and Mauritius have increased the retirement age of workers to deal with the aging demographic structures. In addition, Singapore has annuitized the CPF scheme, introduced a special employment credit for employers who employ persons above 55 years, and invests CPF funds in Special Government Bonds issued with a AAA credit rating. In Chile, contributors can

participate in investment decisions to raise confidence in the pension system. Fund managers provide five types of investment options, and the multi-fund investment system offers contributors the opportunity to pursue higher returns and risks.

7.2.4.8 Minimizing labour market distortions

Chile has redistributive pillars, contributory pillars, and a pension subsidy for younger workers. However, the redistributive Pillar creates a problem of evasion and avoidance during the active working life of contributors, especially for low-income earners. The Chilean pension system also encourages gender inequality. Differences exist in the level of pensions and the age of retirement for men and women. There is also a discriminatory, non-contributory tax-financed pension for the Chilean military personnel.

The CPF scheme in Singapore generally provides incentives for the elderly to continue working. That includes the provision of an additional one (1) percentage point interest on the first S$ 60,000 of CPF members' accounts to serve as an incentive to individuals to work longer. Singapore and Mauritius both have separate military pensions. However, the Singaporean scheme is not as fully tax-financed as Mauritius. That is because funding comes from the government, contributors, and investment income. In Mauritius, workers show preferences for public sector jobs due to discriminatory pension types.

7.2.4.9 Contributions to savings mobilization and financial markets development

Evidence is available that Chile's pension reform has positively impacted national savings and economic growth. The system has injected life into Chile's capital market and has enriched corporations and AFPs but does not necessarily translate to an increase in the replacement rate.

Mauritius pension funds have contributed significantly to the growth of the local stock market. It has also influenced the structure of the securities market, improved liquidity in the financial

market, and serves as an essential source for housing loans. Pension funds usually constitute a substantial and necessary source of capital accumulation in Mauritius.

The CPF serves as a vehicle for savings mobilization for retirement needs in Singapore. According to Koh (2014), the compulsory savings by Singaporean workers through the CPF has boosted savings at the national level. Ng (n.d) also noted that without CPF, capital mobilization for the massive public housing projects would not have been possible.

7.2.4.10 Other lessons learned from the case studies

- In Mauritius, pension members have options to convert up to 25 percent of their voluntary pension assets to a lump-sum, and the remaining assets as annuities.
- The Singaporean CPF scheme aims to ensure that monthly contributions for each member are automatically separated and credited into three accounts targeted at the critical needs of members, including housing, health care, and education.
- Singapore's latest revision (2016) of pension contribution rate reduced employers' share of contribution from 14 to 12.75 percent and increased employees' contributions from 10 to 15 percent. This adjustment aims to discourage evasion and raise enough capital for housing projects and other critical social needs.
- The composition of the CPF board takes into consideration the interest of all stakeholders.

7.3 Further remarks

Final remarks are presented in this section.

7.3.1 Supervision of the pension system

Evidence gathered from interviews, extensive review of literature, and the comprehensive analysis of pension system reforms revealed the critical role "supervision" plays in the success of a pension system. The role of supervision in pension system management can be compared to the role of the entrepreneur as a factor of production. Land, labour, and capital cannot yield any output without an effective organisation by the entrepreneur. In the same vein, no success can be achieved in pension system management without effective supervision. Supervision performs an oversight responsibility to ensure that a pension system fulfills its functions of saving, re-distribution, and insurance. Pension supervisory boards set regulatory limits; control management functions and investment decisions, and serve as an intermediary between government and industry. The World Bank's primary eligibility criteria of sustainability, adequacy, equitability, predictability, affordability, and robustness require efficient supervision, without which the outcome will be unproductive. Given the significant roles supervision plays in the success of a pension system (like the eligibility criteria), this study argues that extending the World Bank's primary eligibility criteria to include **"supervision"** as a critical factor is appropriate.

7.3.2 Policy implications

The findings of this research have implications for policy decisions and reforms in the pension industry. Pension policies relating to retirement age, pension contributions, benefit payments, and regulatory limits set on funds have a direct impact on shaping the living conditions of retirees and workers. Therefore, the adoption and application of practical measures demonstrated by "successful countries" would not only improve the pension systems of developing countries but could address the socio-economic needs of such countries. Thus, the burden of old-age income insecurity can be alleviated.

7.4 Recommendations for policy change and further research

The following recommendations are proposed for consideration by governments and other stakeholders in the pension industry in Ghana and other developing countries. Some may require further research:

7.4.1 Policy recommendation

1. A relatively low pension premium should be set for low-income earners and the opportunity must be created for irregular contributions to serve as incentives to participate.
2. Government should institute policies to ensure that all businesses automatically link to a pension fund to improve coverage.
3. Electronic contribution and payment systems should be adopted and encouraged to enhance easy access and regular contributions.
4. Government should emphasize pension education and awareness to promote adequate understanding of the system.
5. Government should consider an upward adjustment of the retirement age to mitigate the effect of demographic changes such as a rise in life expectancy.
6. Depending on the demographic structure of a country, government incentives could be granted to employers who hire the elderly and adopt age-friendly workplace practices to keep the aged in the labour market longer.
7. Pension fund managers may consider a policy that allows inter-generational transfers of income by fund holders to less advantaged household members to raise their retirement income.

8. Fund administrators of DB schemes should consider the lifetime average salary calculations of benefits instead of using the "average of best three years' salary" to avoid strategic manipulations and to strengthen the sustainability of the pension system.
9. Fund managers should involve contributors in investment decisions to allow for transparency and confidence.
10. Multi-fund investment policies should be adopted to offer contributors the opportunity to pursue higher returns and risks.
11. The contributions of members should be guaranteed with Special Government Securities with a credible credit rating to boost investor confidence and participation.
12. A trusted management body should be appointed by the government with the responsibility to annuitize a part or all of the voluntary contributions of informal workers to ensure a regular pension instead of a lump-sum benefit.
13. Consideration should be given to creating separate accounts for monthly contributions for each fund holder that would automatically be credited to meet the housing and health needs of members during retirement.

***Depending on the fiscal position of a country, consideration should be given to the following*:**

1. Government could introduce a tripartite pension finance model where employers, employees, and government contribute to the fund to enhance adequacy and affordability.
2. Government may grant pension subsidies to young workers to raise their participation rate.
3. Government should introduce a means-tested redistributive pillar to raise the income of the aged poor, and to provide cover to those who have not enrolled in any pension scheme.

7.4.2 Recommendations for further research

The following issues may require further enquiry into pension reforms:

1. Pension systems analysis should be extended to include the experience of the aged in general and especially those who retire from the informal sector and depends solely on the voluntary contributory scheme.
2. A study that blends the views of retirees and workers (non-pensioners) is recommended to unveil the perception and level of preparedness of workers in terms of retirement.
3. Further research that widens the scope of the case studies and draws on other pension models is recommended.

7.5 Final conclusions

The pension industry plays a significant role in the socio-economic development of a country by reducing poverty and vulnerability among the elderly. A multi-pillar approach is supported and regarded as essential for a comprehensive assessment of pension systems. Evidence gathered for this research revealed that Ghana's pension system has failed to adequately meet the requirements of the critical factors proposed by the World Bank for pension systems evaluation. It is hoped that this research may serve as an impetus for pension reform in Ghana and other developing countries.

APPENDICES

APPENDIX A: INTERVIEW GUIDE FOR PENSIONERS

(Research permission reference number: 2020-DE-08(SD)-E-MEGBETOR)

This research is purely an academic exercise to collect data on your views of the pension systems and schemes in Ghana. Your participation is voluntary and all responses are anonymous. Under no circumstance will there be any attempt to connect responses to your name or to the organization that employ you. This interview complies with the ethical standards required by the University of South Africa and was approved by this institution. Please respond to the questions honestly and to the best of your ability.

Date of Interview: ………………………………..Location: ……………………………

Telephone: ………………………………………email: …………………………………..

Introduction: Self introduction by the researcher and each participant.

Questions

1. How would you describe the living conditions of retirees?

2. What are the main problems you are experiencing with your pension?

3. How could such problems be corrected?

4. Do you consider pensions as a way to prevent elderly individuals from falling into poverty? Explain your answer.

5. Given what you know now, is there anything you would have changed regarding saving for retirement if you were a young worker today?

6. What is your advice for somebody contemplating early retirement?

7. What is your view on increasing the age of retirement beyond 60 years?

8. What advice regarding pensions do you have for government and other stake holders in the pension industry?

End of interview: ***Thank you for participation. I appreciate your time spent with me.***

APPENDIX B: INTERVIEW GUIDE FOR PENSION FUND MANAGERS

(Research permission reference number: 2020-DE-08(SD)-E-MEGBETOR)

This research is purely an academic exercise to collect data on your views of the pension systems and schemes in Ghana. Your participation is voluntary and all responses are anonymous. Under no circumstance will there be any attempt to connect responses to your name or to the organization that employ you. This interview complies with the ethical standards required by the University of South Africa and was approved by this institution. Please respond to the questions honestly and to the best of your ability.

Date of Interview: ………………………………..Location: ……………………………..………

Telephone: ………………………………………email: ……………………………………….

Questions

PART A: Introduction and Demographic information

1. What is your highest educational level?

2. What is the name of the organization that employs you?

3. For how long have you been in a management position in this organization?

4. What is your position in this organization?

5. What is your specific role in the organization?

PART B: Adequacy of pensions

1. Do you consider the current pension deductions adequate[19] to prevent old age poverty?

2. Is provision made in the pension scheme to protect low income earners? What exactly is done?

[19]**Adequacy** is the need for the pension system to provide benefits that will prevent poverty during old age.

3. How much is the current lowest and highest pension your organization is paying pensioners?

- How does the level of pension compare to the respective highest earnings before retirement for each of the individuals referred to in the first part of this question?

4. What would you say is the average replacement ratio? This is the value of a pension expressed as a proportion of worker's wage just before retirement.

5. Are pension benefits indexed against price fluctuations (inflation)?

- If the answer is yes, how is this done?

6. What are the components of the benefit formula upon which pension payments are based?

7. Do pensions prevent individuals from falling into poverty? Explain your answer.

8. Is the Ghanaian financial markets sufficiently developed to fulfil the needs of pension funds? Why (not)?

9. Did management invest a part of the pension funds in other countries to diversify their portfolio and to obtain higher returns to protect members against exchange rate fluctuations?

PART C: Sustainability of pension fund

1. How are pension funds invested in Ghana? Do you consider this viable and sustainable?

2. To what extent had the macroeconomic environment, particularly persistent double digit inflation, influenced pension funds?

3. Do you regard your pension fund sustainable given the current rate of contributions and financial market outcomes?

4. What is being done to strengthen the sustainability of the pension fund?

5. How significant is the gradual rise in life expectancy in Ghana on the disbursement of pension funds?

6. Given the current financial state of the pension fund, will you recommend an increase in retirement age? Why (not)?

7. Will the indexation of pension benefits to counter inflation be a threat to the sustainability of the pension fund? Explain your answer.

8. If you are given the opportunity to make recommendations, what reform(s) would you recommend for Ghana's pension system?

PART D: Coverage of the work force

1. How many workers in your organization are members of the mandatory pension scheme?

2. How many workers in your organization are members of the voluntary Tier-Three[20] pension scheme since its inception in January 2010?

3. How many workers were captured by the voluntary Tier-Three in 2019?

4. Is there adequate awareness creation for more informal sector workers to participate in your pension scheme? Why?

5. Do the pension funds administered by your organization have strategies in place to convince more individuals to participate in the pension programme? What are the strategies?

6. Did your organisation try to enroll more workers to participate in your pension scheme? If so, what challenges have you encountered?

7. What are your comments on the raise of the contribution rate from 17.5 to 18.5 percent during the 2010 pension reforms?

[20] The Tier-Three pension scheme consists of a voluntary contributory scheme with monthly contributions for both formal and informal sector workers. It is a Defined Contribution scheme that is privately managed.

8. What strategy do you employ to ensure that all firms (employers) pay the contributions of employees to the pension fund?

PART E: Other aspects of pension

1. What does your institution consider as the main challenges of pensioners in Ghana?

2. What is being done to rectify these challenges? Why not?

3. What are the main challenges your institution faces in the management of pension funds?

4. Do you have built-in structures in place to protect your funds from any major economic or political shocks? If your answer is yes, what structures are in place?

5. What is the role of pension funds in the development of financial markets?

6. Did the introduction of Tiers two[21] and three contribute to savings mobilization? Why (not)

End of interview

Thank you for your precious time to respond to my questions. I am very grateful.

[21]Tier-Two is a compulsory contributory scheme with monthly contributions of 5% on the basic salary of all formal sector employees. It is privately managed, as Tier-Three.

APPENDIX C: PENSION FUND MANAGERS' INFORMATION SHEET FOR INTERVIEWS

(Ethics clearance reference number: 2020-DE-08(SD)-E-MEGBETOR)

Date: …………………

Title: An economic analysis of the Ghanaian pension system

Dear Prospective Participant

My name is **Elias Kwaku Megbetor** and I am doing research with **Theo van der Merwe**, a **professor** in the **Department of Economics** towards a **PhD** at the University of South Africa. We are inviting you to participate in a study entitled "**An economic analysis of the Ghanaian pension system"**.

PURPOSE OF THE STUDY

The purpose of this study is to investigate the Ghanaian pension system and to determine to what extent it fulfills its goals. This study is expected to collect important information that could identify flaws in the existing pension scheme of workers in Ghana and why the scheme is able or unable to guarantee a moderate living standard for pensioners. The study apart from examining the sustainability measures and management of the Ghanaian pension scheme is also expected to determine the extent of coverage of the scheme. Identification of loopholes in the pension system will mean the existing Social Security Policies do not adequately support Old Age Security.

The Ghanaian pension system is also compared to pension systems in other developing nations to identify limitations and positive aspects. This information will provide a new guide to stake holders of the necessary reforms needed to improve the plight of pensioners and workers at large.

INVITATION TO PARTICIPATE IN TELEPHONE INTERVIEWS

You are identified to participate in this study because you are knowledgeable about pension practices and are aware of what is presently happening in the industry. Your contributions are valued and are much appreciated. I got your telephone contact from the Public Affairs Manager of your institution (Social Security and National Insurance Trust-SSNIT) and Ten (10) pension fund managers including you from SSNIT in Accra are selected for this study.

NATURE OF PARTICIPATION

You will respond to interview questions that will be posed by me on telephone. There will be note taking and audio recordings of your response. The interview questions will focus on sustainability,

coverage, adequacy and challenges of the Ghanaian pension system and steps being taken to address some of the challenges, if any exists. The duration for the interview session is 35-45 minutes.

PARTICIPANT'S RIGHTS

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason and there is no penalty for non-participation.

BENEFITS

You may not directly benefit from participating to this study; however, it is expected that this research may assist to improve the Ghanaian pension system of which you may be a beneficiary. It is also expected that the outcome of this research will eventually benefit pensioners and society as a whole.

CONSEQUENCES/RISKS

There is no known or foreseeable risk for participation in this study. The telephone interview is employed to reduce the risk of harm from COVID-19 pandemic that will be caused by direct human interaction.

CONFIDENTIALITY

You are assured that every response given will be treated as confidential. You have the right to insist that your name will not be recorded anywhere. You will therefore be identified by a pseudonym and that no one, apart from the researcher will know about your involvement in this research. You will be referred to in this way in the data, any publications, or other research reporting methods such as journal articles and/or conference proceedings. Your answers may be reviewed by people responsible for making sure that the research is done properly, including the transcriber and members of the Research Ethics Review Committee. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

DATA PROTECTION AND STORAGE

Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked drawer for future research or academic purposes and the electronic information will be

stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval. Hard copies of data will be destroyed by shredding, and electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme.

INCENTIVES/COST

There is no reward or incentive for participating in this research. However, any cost that will emerge from the use of data due to email correspondence will be borne by the researcher.

ETHICS APPROVAL

This study has received written approval from the Research Ethics Committee of the College of Economics and Management Science, UNISA. A copy of the approval letter can be obtained from the researcher if you so wish.

QUESTIONS

At any time during the interview process or group discussions, you are more than welcome to raise questions and to express any concerns.

INFORMATION ON THE FINDINGS/RESULTS OF THE RESEARCH

If you would like to be informed of the final research findings, please contact ELIAS KWAKU MEGBETOR on +233(0)244538308 or emegbetor@gmail.com. The findings are accessible from October 2021. Should you require any further information or want to contact the researcher about any aspect of this study, please contact the details provided above.

Should you have concerns about the way in which the research has been conducted, you may contact vdmert@unisa.ac.za or 012-433-4674 or contact the research ethics chairperson of the CAES Health Research Ethics Committee, Prof MA Antwi on 011-670-9391 or antwima@unisa.ac.za if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

Signature:

(Elias Kwaku Megbetor)

APPENDIX D: PENSIONERS' INFORMATION SHEET FOR INTERVIEWS

(Ethics clearance reference number: 2020-DE-08(SD)-E-MEGBETOR)

Date: …………………

Title: An economic analysis of the Ghanaian pension system

Dear Prospective Participant

My name is **Elias Kwaku Megbetor** and I am doing research with **Theo van der Merwe**, a **professor** in the **Department of Economics** towards a **PhD** at the University of South Africa. We are inviting you to participate in a study entitled "**An economic analysis of the Ghanaian pension system"**.

PURPOSE OF THE STUDY

The purpose of this study is to investigate the Ghanaian pension system and to determine to what extent it fulfills its goals. This study is expected to collect important information that could identify flaws in the existing pension scheme of workers in Ghana and why the scheme is able or unable to guarantee a moderate living standard for pensioners. The study apart from examining the sustainability measures and management of the Ghanaian pension scheme is also expected to determine the extent of coverage of the scheme. Identification of loopholes in the pension system will mean the existing Social Security Policies do not adequately support Old Age Security.

The Ghanaian pension system is also compared to pension systems in other developing nations to identify limitations and positive aspects. This information will provide a new guide to stake holders of the necessary reforms needed to improve the plight of pensioners and workers at large.

INVITATION TO PARTICIPATE IN TELEPHONE INTERVIEWS

You are identified to participate in this study because you are a pensioner who has the requisite experience and a living testimony of the predicaments of pensioners in Ghana. You are also aware of some of the practices and what is presently happening in the industry. Your contributions are valued and are much appreciated. I contacted your Area Head Reverend Minister and he permitted me to talk to you. As many as ten (10) of you who will volunteer to participate will be allowed to take part in this telephone interview.

NATURE OF PARTICIPATION

The researcher will pose the following questions to you for your response in a telephone interview:

1. How would you describe the living conditions of retirees?
2. What are the main problems you are experiencing with your pension?
3. How could such problems be corrected?
4. Do you consider pensions as a way to prevent elderly individuals from falling into poverty? Explain your answer.
5. Given what you know now, is there anything you would have changed regarding saving for retirement if you were a young worker today?
6. What is your advice for somebody contemplating early retirement?
7. What is your view on increasing the age of retirement beyond 60 years?
8. What advice regarding pensions do you have for government and other stake holders in the pension industry?

The interview is expected to last for 35-45 minutes duration.

PARTICIPANT'S RIGHTS

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason and there is no penalty for non-participation.

BENEFITS

You may not directly benefit from participating to this study; however, it is expected that this research may assist to improve the Ghanaian pension system of which you may be a beneficiary. It is also expected that the outcome of this research will eventually benefit pensioners and society as a whole.

CONSEQUENCES/RISKS

There is no known or foreseeable risk for participation in this study. The telephone interview is employed to reduce the risk of harm from COVID-19 pandemic that will be caused by direct human interaction.

CONFIDENTIALITY

You are assured that every response given will be treated as confidential. You have the right to insist that your name will not be recorded anywhere. You will therefore be identified by a pseudonym and that no one, apart from the researcher will know about your involvement in this research. You will be referred to in this way in the data, any publications, or other research reporting methods such as journal articles and/or conference proceedings. Your answers may be reviewed by people responsible for making sure that the research is done properly, including the transcriber and members of the Research Ethics Review Committee. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

DATA PROTECTION AND STORAGE

Hard copies of your answers will be stored by the researcher for a minimum period of five years in a locked drawer for future research or academic purposes and the electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval. Hard copies of data will be destroyed by shredding, and electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme.

INCENTIVES/COST

There is no reward or incentive for participating in this research. However, any cost that will emerge from the use of data due to email correspondence will be borne by the researcher.

ETHICS APPROVAL

This study has received written approval from the Research Ethics Committee of the College of Economics and Management Science, UNISA. A copy of the approval letter can be obtained from the researcher if you so wish.

QUESTIONS

At any time during the group discussion process, you are more than welcome to raise questions and to express any concerns.

INFORMATION ON THE FINDINGS/RESULTS OF THE RESEARCH

If you would like to be informed of the final research findings, please contact ELIAS KWAKU MEGBETOR on +233(0)244538308 or emegbetor@gmail.com. The findings are accessible from October 2021. Should you require any further information or want to contact the researcher about any aspect of this study, please contact the details provided above.

Should you have concerns about the way in which the research has been conducted, you may contact vdmert@unisa.ac.za or 012-433-4674 or contact the research ethics chairperson of the CAES Health Research Ethics Committee, Prof MA Antwi on 011-670-9391 or antwima@unisa.ac.za if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

Signature:

(Elias Kwaku Megbetor)

CONSENT TO PARTICIPATE IN THIS STUDY

(Research permission reference number: 2020-DE-08(SD)-E-MEGBETOR)

I, __________________ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.
I have had sufficient opportunity to ask questions and am prepared to participate in the study.
I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the telephone interviews.
I have received a signed copy of the informed consent agreement.
Participant Name & Surname: ………………………………… (please print)
Participant Signature: ………………….. Date…………………
Researcher's Name & Surname: ELIAS KWAKU MEGBETOR

Researcher's signature:

Date…………………

APPENDIX E: GATEKEEPERS LETTER TO CONTACT PENSION FUND MANAGERS

REQUEST TO CONDUCT RESEARCH AT SOCIAL SECURITY AND NATIONAL INSURANCE TRUST (SSNIT)

Thesis Title: An economic analysis of the Ghanaian pension system
September 1, 2020

Miss Afua Amankwa Sarkodie
P. O. Box MB, 149, Ministries, Accra-Ghana
Corporate Affairs Manager, SSNIT
Pension House - Accra
Tel: 0302-667742/686373

Dear Madam,

I, Elias Kwaku Megbetor **(student number: 58539778)** am doing research with **Theo van der Merwe**, a **professor** in the **Department of Economics** towards a **Doctorate degree in Economics** at the University of South Africa. The title of my research is "**An economic analysis of the Ghanaian pension system"**
The aim of the study is to investigate the Ghanaian pension system and to determine to what extent it fulfills its goals. The Ghanaian pension system is also compared to pension systems in other developing nations to identify limitations and positive aspects. The research is in the form of conducting a telephone interview for pension fund managers on pension coverage, sustainability, adequacy and challenges of the Ghanaian pension system and steps being taken to address some of the challenges, if any exists. The duration for the interview session is 35-45 minutes.

Prior consent will be obtained from each manager or deputy before conducting any interview.

I look forward to receiving a positive response from you.

Yours sincerely

Signed

(ELIAS KWAKU MEGBETOR)

APPENDIX F: GATEKEEPERS LETTER TO CONTACT PENSIONERS

REQUEST TO CONDUCT RESEARCH IN THE CHURCH OF PENTECOST MADINA AREA

Thesis Title: An economic analysis of the Ghanaian pension system

September 1, 2020

Apostle Martin Seth Appiah
The Church of Pentecost, Madina Area
P.O Box P.M.B 103
Madina-Accra, Ghana
Tel: 0302508188/0243221039

Dear Sir,

I, Elias Kwaku Megbetor **(student number: 58539778)** am doing research with **Theo van der Merwe**, a **professor** in the **Department of Economics** towards a **Doctorate degree in Economics** at the University of South Africa. The title of my research is "**An economic analysis of the Ghanaian pension system"**

The aim of the study is to investigate the Ghanaian pension system and to determine to what extent it fulfills its goals. The Ghanaian pension system is also compared to pension systems in other developing nations to identify limitations and positive aspects. The research is in the form of conducting a telephone interview for pensioners in the Madina Area of the Church of Pentecost on pension adequacy, challenges, pensioners' views about the Ghanaian pension system and their opinions on how the challenges can be addressed, if any exists. The duration for the interview session is 35-45 minutes.

Prior consent will be obtained from each pensioner before conducting any interviews.

I look forward to receiving a positive response from you.

Yours sincerely

Signed **(**ELIAS KWAKU MEGBETOR)

APPENDIX G: A TABLE SHOWING AN AUDIT TRAIL OF THE RESEARCH PROCESS

Date	Research Decision/Activity
May-July, 2020	Made methodological determinations through literature review
August 2-29, 2020	Worked with supervisor and peers doing similar qualitative research to share and complete peer review of qualitative procedures.
August 31, 2020	Visit to Madina Area office of the Church of Pentecost (COP) in Accra for a preliminary survey acquaintances.
September 3, 2020	Application letter to SSNIT to conduct interviews.
September 4, 2020	Application letter to the Madina Area office of the COP to conduct interviews.
September 11, 2020	Received approval letter from SSNIT to proceed and conduct research.
September 12, 2020	A follow up on the application letter to the COP Madina Area office.
September 18, 2020	Received approval letter from the COP to proceed and conduct research.
September 24, 2020	Application for Ethical Clearance Certificate (ECC) from UNISA
October 2, 2020	Amendment of application as a result of a change in interviewing technique due to the outbreak of COVID-19 pandemic.
October 8, 2020	Approval and receipt of ECC from UNISA.
October 24, 2020	Follow up to the COP Madina Area office for interviewees' telephone contacts.
October 25-31, 2020	Explained the informed consent form and process to the selected interview participants
November 3-18, 2020	Interviews for pensioners
Nov. 20-Dec10, 2020	Interviews for pension fund managers
Dec 11, 2020-Jan9, 2021	Performed transcription and analysis process of all interview recordings.
January 10-Feb 20, 2021	Data analysis through transcript review
Feb 15- March 10, 2021	Requested peer and colleague review as findings and themes emerge.
March 31, 2021	Presentation of interview results to supervisor.

APPENDIX H

WHAT MAIN LESSONS CAN BE LEARNED FROM THE EXPERIENCE OF CHILE, MAURITIUS AND SINGAPORE?

Introduction

This section of the research highlights and briefly summarises the main lessons that can be learned from the comparative study.

Lessons from the Chilean pension system

Main lessons from Chile to alleviate old-age poverty:

- Pillar-1 of the scheme makes provision for Old-age Basic Solidarity Pension (PBS) which is paid by government to individuals without any pension savings.
- All individuals entitled to a PBS are granted survivor pension benefit in case of death. This benefit is paid to the person responsible for the funeral expenses (Fajnzylber, 2019).
- The Solidarity Pension Payments (APS) scheme provides supplementary funding to all individuals who have contributed to the mandatory pension system but have very low pensions.
- The health needs of beneficiaries of PBS and APS are covered by the state.
- In Chile, young workers between 18 to 25 years old receive a state-funded pension subsidy. This provision may serves as a morale booster and incentive for younger workers to participate in pension contributions.
- Chile has discriminatory retirement age for men and women. Men retire at 65 years whiles women retire at 60 years.

- Chile has made participation in the labour market flexible to mitigate the pension sustainability threat of the aging population. Workers are not obliged to retire at the stipulated retirement age.
- Chile has a multi-fund investment system (see Table 5.1) where contributors are offered the opportunity to select their own investment option. Involving pension contributors in this way allows for transparency which aligns with pension supervision principles (No.9) as indicated by IOPS (2010).
- In the Chilean pension system, employers are not mandated to contribute partly towards workers' retirement; they are only obliged to pay a disability and survivor insurance. Workers are responsible for their pension contributions, which may be partly responsible for the low replacement rate in Chile.
- The affordability of pensions in Chile is negatively influenced by the high administrative fees. This has encouraged evasion especially by the self-employed.
- The Chilean pension system also enhances gender inequalities besides the differences in the level of pensions and the age of retirement. Women usually have unequal access to jobs, work histories, and earnings, which translates into poor pension benefits (Bertranou, 2016).
- The pension scheme makes provision for a state pension bonus for women with children, a child support grant so late in life may not make much sense, only to compensate women for sacrifices made earlier in their motherhood. It may make sense to rather introduce child support grant to ensure needy children can benefit from this assistance.
- Chile has proposed pension reforms that include a tripartite pension model as a way of addressing the challenges confronting the current system.

Lessons from the Mauritius pension system

The following lessons can be learnt from the Mauritian pension system:

- The Mauritius pension system has a non-contributory cash transfer programme that is universal in nature. The government pays an amount to all citizens 60 years and above who earn below a specified minimum income on a monthly basis through a means-test. The amount received by citizens is not uniform but rather depends on the recipient's age and income levels. This protects the elderly from extreme poverty (Guven & Leite, 2016).
- As a result of the non-contributory cash transfer programme, no elderly individual in the country is left unprotected, thus a 100 percent pension coverage but at a low replacement rate of less than 26 percent compared to 60 percent for OECD countries (World Bank, 2004).
- The Mauritius' tax-financed basic universal pension (BRP) promotes equity and the amount of pension depends on the age of the beneficiary. The scheme mainly targets the vulnerable, women and informal workers (Clements, Eich & Gupta; 2014).
- The rising life expectancy coupled with a reduction in the total fertility rate threatens the long-term sustainability of the pension scheme, especially the BRP and the CSPS schemes (Statistics Mauritius, 2014).
- According to David and Petri (2013), the current BRP expenditure as percentage of GDP will rise sharply by 4.5 percentage points between 2015-2050 that may not be fiscally sustainable.
- Guven and Leite (2016) identify the fiscal affordability of the BRP scheme as a key challenge.

- At the 2008 OECD/IOPS Global Forum on Private Pensions, it was disclosed that the high administrative cost of private pensions in Mauritius and other sub-Saharan African countries are passed on to contributors with eventual negative implications for pension levels.
- In an effort to address the fiscal threat pose by the BRP expenditure, the government in 2018 has increased the retirement age from 60 to 65 years for all pension pillars except for the basic pension pillar, which remain at 60 years.
- To ensure the sustainability of the pension fund, the NPS adjusted the price index downwards, which leads to a lower replacement ratio. This suggests retirement needs may not be adequately catered for. Pension benefit should be adjusted in line with price increases to maintain living standards of beneficiaries.
- The Mauritius voluntary pension schemes are established by private companies to provide pensions for their employees. Yermo (2008) opines that Mauritius pension funds contribute to improved liquidity in the financial market.
- The Mauritius labour force is covered by three different pension types. These are a universal pension scheme, a PAYG system for civil servants and a fully funded private scheme. This contributes to labour supply distortions as workers often prefer public sector jobs (Deerpalsing, 2004).
- The Mauritius pension system does not have the institutional capacity to effectively implement the rules of BRP and NPS to maintain and ensure accountability (World Bank, 2004).
- According to Guven and Leite (2016), limited information regarding contributions and benefits is a key challenge for the Mauritian pension system. The authors posit that 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 fund and asset management.

Lessons from the Singaporean CPF pension system

The Singaporean pension system revealed the following lessons:

- Employers and employees together contribute to the CPF pension fund.
- The amount of contributions into the CPF accounts varies with the age of the employee and the sector of employment. For instance, higher contributions are made during early years of work and this continues to decline until the age of 55 years. This is because higher savings is required to prepare adequately for retirement (see Tables 5.7 and 5.8).
- One striking feature of the Singaporean pension system is that the government uses CPF contributions as leverage to solve other critical needs of the country. For example the pension fund is used by members to finance housing, health care and educational needs.
- Monthly pension contributions are automatically separated and credited into three accounts with different aims, namely: Ordinary Account (OA), Special Account (SA) and Medisave Account (MA).
- The OA of the CPF system which is designed for housing and educational expenses has led Singapore to an enviable achievement of 91 percent private homeownership compared to 43 percent and 61 percent in Portugal and Italy respectively (OECD, 2019).
- Extreme poverty and income inequality are reduced through the government's 'aided school' policy of educational expenditure on scholarships, grants and bursaries enshrined in the OA of the CPF system (Singapore Ministry of Education, 2020).

- The educational provision in the CPF has yielded remarkable outcomes. Singapore for example ranked highly in the United Nations' Human Development Index. In 2014, Singapore ranked 11th globally, and 1st in Asia (OECD, 2015).
- The OA also allows for inter-generational transfers to enhance the retirement income of household members who do not have sufficient pension savings Koh (2014).
- The MA is created to provide for the nation's health care needs. The Medisave health provision has been a very successful scheme and Singapore can boast of a relatively high life expectancy of 85.2 years.
- The MA scheme also relieves government of extra fiscal provisions for health care (CPF Retirement Booklet, 2019).
- In order to address the problem of an aging population, the country introduced a CPF Life scheme in 2009. This scheme is a national annuity scheme that provides a life-long retirement income security for the aged (CPF Board, 2011). The CPF Life has made the pension scheme more sustainable, fair, flexible and affordable (World Economic Forum, 2017).
- There is also flexibility with regards to the retirement age for both men and women. It is not mandatory to retire at the age of 62 years. By law, Singaporean citizens are allowed to work up to the age of 75 years to improve their income capacity (World Economic Forum, 2017).
- Singaporeans are encouraged to work beyond the retirement age of 62 years. To make this practicable and effective, a special employment credit of up to 8 percent of wages is given to employers who employ persons above 55 years.
- A further policy adjustment to the aging population is that employers are given grants to redesign jobs for the aged and adopt age-friendly workplace practices. Due to these

measures, about 40 percent of Singaporeans between the ages of 65-70 years are still in the labour market (Fong et al, 2010).

- In special cases, where the CPF 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 requirement to allow members to enrol in a CPF Life to earn a life annuity. This is done with the aid of a means-test that makes the CPF scheme fair and equitable.
- The CPF board ensures that premiums are kept at relatively low levels. No limit is set for the CPF Life premium and members with lower savings in their retirement accounts can participate because government tops up the difference to make such individuals eligible. This makes the pension system affordable and flexible.
- The CPF has other redistributive features that inure the benefit of low income earners. For example, since 2016 an extra 1percentage point interest is paid on the first S$30,000 of CPF balances for members aged 55 and above. There is an additional provision of a 1 percentage point additional interest on the first S$ 60, 000 of CPF members account balances. These provisions help to improve workers' retirement earnings particularly those with lower balances in their Retirement Account.
- In 2016, another non-contributory scheme called the Silver Support Scheme (SSS) was introduced to provide an income supplement for retired Singaporeans who are above 65 years with incomes falling between the bottom 20 to 30 percent.
- CPF members have the discretion to choose the age at which payouts should commence ones they have reached the age eligibility of 65 years.
- Those who defer their pension after 65 years and continue to work are given an incentive of a 7 percent rise in pay each year.

- CPF members have two options when it comes to investing their pension contributions. They may either allow the CPF board to invest on their behalf after setting aside the BRS or choose from available investment products in the country such as corporate bonds, fixed deposits, government treasury bills and saving plans from insurance companies.
- To ensure that retirees receive a stable retirement income, to allay fears of investment risks and make the CPF scheme financially robust, the CPF board automatically invests the funds in a Special Singapore Government Securities (SSGS) which are bonds with a AAA credit rating.
- The SSGS investment earns a risk-free interest rate of up to 6 percent per annum. This rate is higher than the normal rates earned on bank accounts. According to Fong, Mitchell and Koh (2010), members of CPF Life have confidence in the state-run scheme because they perceive it to be safer than private insurers that may go bankrupt.
- To achieve wide pension coverage, 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 as low as S$50 per month or higher to enrol to the CPF pension scheme.
- A CPF account is opened for Singaporean traders who are not already CPF members before their permits are approved (Loke, 2009). This is to widen coverage.
- The wide coverage of the CPF membership can also be attributed to the technological platforms and management practices adopted that resulted in pension coverage of 94.1 percent (Asher, 2013). Using the electronic platform has reduced human error associated with pension submissions by 42 percent in 2011 (International Social Security Association, 2011).

- The CPF has undergone many changes to boost Singapore's economic fundamentals, as well as the security markets. For instance, in 1986 and 1999, the CPF was used as an economic recovery tool to address the country's economic crisis. The government reduced employers' contribution rates to assist individuals to keep their jobs although this meant a shortfall in CPF savings (Asher, 1999).
- The CPF has a weak pillar zero that inadequately protects the few who are not covered by other CPF arrangements (Ramesh, 2006).
- Too much capital withdrawal before retirement could lead to an inadequate pension, especially as the life expectancy of Singaporeans increases (see section 5.4.8.2).
- The annuity benefit is specified in nominal terms. This implies that real benefits will decline at the rate of inflation.
- The MediShield health care scheme is restrictive because it excludes people above 92 years. What this means is that these vulnerable old individuals are left without any form of insurance. Given the high life expectancy, appropriate private health insurance may be useful.
- Finally, the CPF is discriminatory against non-residents because they are excluded from the fund (Pension Fund Online, n.d).

APPENDIX I: ETHICAL CLEARANCE CERTIFICATE OBTAINED FROM UNISA RESEARCH AND ETHICS REVIEW COMMITTEE

UNISA DEPARTMENT OF ECONOMICS ETHICS REVIEW COMMITTEE

Date 8 October 2020

Dear Mr Megbetor,

Decision: Ethics Approval from 2020 to 2024 (specify the time period relevant to the approval)

NHREC Registration # : (if applicable)
ERC Reference # : 2020_DE_08(SD)_ E_ MEGBETOR
Name : EL Megbetor
Student #: 58539778
Staff #:

Researcher(s): Mr EL Megbetor,
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Supervisor (s): Prof T Van Der Merwe
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Working title of research:

AN ECONOMIC ANALYSIS OF THE GHANAIAN PENSION SYSTEM

Qualification: PhD in Economics

Thank you for the application for research ethics clearance by the Unisa Economics Ethics Review Committee for the above mentioned research. Ethics approval is granted for 5 years.

*The **low risk application** was **expedited** by a Sub-committee of URERC on 8 October in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was approved on 8 October.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.

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2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Economics Ethics Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
8. No field work activities may continue after the expiry date (2024). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number 2020_DE_08(SD)_ E_ MEGBETOR *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,
Dr MR Malefane

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REFERENCES

Adjei, E. N. (2000) 'Pension schemes in Africa: The national experience of Ghana', in *Social security in Africa: New realities.* Abidjan: ISSA.

Aflo, M. (2020) 'A decade of pension policy reforms: Challenges, economic realities and prospects'. Available at: http://www.thebftonline.com (Accessed on 10th January, 2020).

Agneta , K. (2010) 'A stable pension system: The eighth wonder'. *Centre for Economic Demography and Department of Economics School of Economics and Management, Lund University.*

Alise, M. A. and Teddlie, C. (2010) 'A continuation of the paradigm wars? Prevalence rates of methodological approaches across the social/behavioral sciences', *Journal of Mixed Methods Research*, 4(2), 103-126.doi: https://doi.org/10.1177 (Accessed on 11th October, 2019).

Allianz Global Investors Index (AGII), (2011) *Reveals countries in greatest need of pension reform*. Available at: https://www.allianz.com (Accessed on 15th March, 2020).

Alsaawi, A. (2014) 'A critical review of qualitative interviews', *European Journal of Business and Social Sciences*, 3 (4), 149-156.

Amartey-Vondee, E. (2015) *The regulatory framewok for occupational pension and other private pension schemes: The experience of Ghana.* Available at: https://www.npra.gov.gh (Accessed on 2nd August, 2020).

Anders, M. (2017) *Can a new pension scheme offer security to informal workers in Ghana?* Available at: https://www.devex.com/news/can-a-new-pension-scheme-offer-security-to-informal-workers-in-ghana-91296 (Accessed on 12th August, 2020).

Anku-Tsede, O., Ametorwo, A. and Amankwa, A. (2014) *Managing Pension Funds in Ghana: An Overview.* Available at: http://dx.doi.org/10.5430/bmr.v4n1, 25 (Accessed on 4th October, 2020).

Antolin, P. (2007) 'Longevity risk and private pensions', *OECD Working Papers on Insurance and Private Pensions*, No. 3, OECD Publishing.doi:10.1787/26126061308 (Accessed on 8th May, 2019).

Antolin, P., Pugh, C. and Stewart, F. (2008) 'Forms of benefit payment at retirement', *OECD Working Papers on Insurance and Private Pensions*, No. 26, OECD publishing. doi:10.1787/238013082545 (Accessed on 15th August, 2020).

Araneda, J. M. (2019) *The great scam to the workers; AFPs.* Available at: http://www.nomasafp.cl/ (Accessed on 3rd August, 2019).

Arku, J. (2019) ‘Collapse of savings and loans companies: Payments to begin within 7 days’, *Graphic Online.* Available at: https://www.graphic.com.gh/news/general-news/collapse-of-savings-and-loans- (Accessed on 15th October, 2020).

Arndt P. (2020) 'Shareholder structure and dividend policy in the developed markets of Asia-Pacific', *European Journal of Business Science and Technology, 6 (1).* Available at: https://www.ejobsat.com. (Accessed on 16th November, 2020).

Asamoah, Y. and Nortey, D. N. A. (1987) ‘Ghana: The welfare system environment’, in *Social Welfare in Africa.* London: CroomHelm, 1-22.

Ashaley, W. K. (2012) *Pension reform in Ghana: A study of the pension scheme of three tiers*. MSc thesis. University of Campinas.

Asher, M. G. (1999) ‘The pension system in Singapore: Special protection, labour market, pensions, and social assistance’, *The World Bank.*

Asher, M.G. (2013) ‘Singapore’s CPF: A sustainable and fair solution to the country’s pension challenge?’ *LKY School of Public Policy National University of Singapore*.

Asher, M. G. and Bali, S. A. (2013) ‘Fairness and sustainability of pension arrangements in singapore: An assessment’, *Malaysian Journal of Economic Studies*, 50(2).

Association of Pension Fund Administrators (AFPs) in Chile (2015) *Study Series,* no. 98. Available at: https://www.fiapinternacional.org/en/study/, (Accessed on 25th August, 2019).

Attah-Krufi, H. (2020) ‘National Pensions Regulatory Authority’, *Paper presented at 71st Annual New Year School and Conference at the University of Ghana, 2020.*

Attanasio, O., Meghir, C. and Otero, A. (2011) Formal labor market and pension wealth: *evaluating the 2008 Chilean pension reform.* Available at: *http://www.homepages.ucl.ac.uk/* (Accessed on 23rd October, 2020).

Austin, Z. and Sutton, J. (2014) ‘Qualitative research: Getting started’, *Canadian Journal of Hospital Pharmacy* 67(6): 436-440.

Baah, Y. (2020) ‘Top up pensions of 2020 retirees’, *Daily Graphic,* 23 September 23, 1, 3.

Baah, Y. (2021) *Trades Union Congress.* Available at: https://ghanatuc.com/wp-content/uploads/ (Accessed on 17th March, 2021).

Bachelet Advisory Commission on the Pension System (2015) *Santiago, President of Chile presents main points of pension reform bill.* Available at: https://www.gob.cl/en/news/president-chile-presents-main-points-pension-reform-bill/, (Accessed on 15th August, 2019).

Badu-Boateng, E. (2017) 'Retirement income security: Fate of the Ghanaian worker*', Incas Labour & Pension Consult.* Available at: https://www.myjoyonline.com, (Accessed on 9th September, 2017).

Baranzini, M. (2012) 'Modigliani's life-cycle theory of savings fifty years later', *PSL Quarterly Review*. Available at: https://doi.org/10.13133/2037-3643/9846 (Accessed on 12th July, 2020).

Barr, N. (2002) 'The pension puzzle: The pre-requisite and policy choices in pension design in economic issues', *International Monetary Fund,* Issue 29, 1-17.

Barr, N. and Diamond, P. (2006) 'The economics of pensions', *Oxford Review of Economic Policy*, 22 (1) 15-39.

Barr, N. and Diamond P. (2009) *Reforming pensions: Principles, analytical errors and policy directions.* Available at: http://eprints.lse.ac.uk/25099/1/Reforming_pensions_%28LSERO (Accessed on 18th July, 2020).

Barrientos, A. (2002) 'Comparing Pension Schemes in Chile, Singapore, Brazil and South Africa, University of Manchester', *United Nations Research Institute for Social Development* (UNRISD), Paper No. 67.

Bertranou, F. (2016) 'Assessing the effects of labor market reforms – a global perspective. A joint ILO /IZA Conference in partnership with leading G20 think tanks'*, ILO Headquarters, Geneva, Switzerland.* Available at*: http://www.iza.org/conference_files/ilo*. (Accessed on 8th June, 2019).

Bhattacharya, J., Mulligan, C. and Reed, R. (2003) 'Labor market search and optimal retirement policy, *Staff General Research Papers Archive 10251,* Iowa State University, Department of Economics. Available at: https://www.ideas.repec.org, (Accessed on 21st August, 2020).

Biesta, G. (2010) 'Pragmatism and the philosophical foundations of mixed methods research, in A. Tashakkori and Teddlie, C. (Eds.)', *Sage handbook of mixed methods in social & behavioral research.* Thousand Oaks, CA: Sage. Available at: https://doi.org/10.4135, (Accessed on 14th September, 2020).

Bikker J. A and Dreu J.D. (2007) *Operating costs of pension funds: the impact of scale, governance, and plan design.* Available at: *https://econpapers.repec.org/RePEc:cup:jpenef* (Accessed on 28th September, 2019).

Blake, D. (2006) *Pension economics.* Chichester, West Sussex: John Wiley & Sons Ltd.

Block, S. and Erskine, L. (2012) *Interviewing by telephone: Specific considerations, opportunities and challenges*. Available at: https://doi.org/10.1177/160940691201100409, (Accessed on 10th May, 2020).

Bloom, D. and McKinnon, R. (2013) 'The design and implementation of public pension system in developing countries: Issues and options', *IZA Policy Paper,* 59, 2-24.

Boafo-Arthur, K. (2009), 'Structural adjustment, policies and democracy in Ghana', in *IMF and Worldbank sponsored structural adjustment programmes in Africa: Ghana's experiences 1983-1999.* Burlington: Ashgate.

Bogdan, R.C. and Biklen, S.K. (2003) *Qualitative research for education: An introduction to theory and methods* (4th ed.). Boston: *Allyn and Bacon*.

Böheim, R. (2014) 'The effect of early retirement schemes on youth employment', *IZA World of Labor.* Available at: https://wol.iza.org/articles/effect-of-early-retirement-schemes (Accessed on 10th May, 2020).

Bond, T. (2016) *Chile and the failure of a privatized pension system*. Available at: https://protectpensions.org/2016/08/23/ (Accessed on 9th August, 2019).

Borella, M. and Fornero , E. (2009) *Adequacy of pension systems in Europe: An analysis based on comprehensive replacement rates*. Available at http://aei.pitt.edu/10967/1/1837%5B1%5D.pdf (Accessed on 8th February, 2020).

Borzutzky, S. and Hyde M. (2015) 'A just retirement future for Chilean workers: Social insurance or private savings?', *BWPI Working Paper,* no 214.

Borzutzky, S. and Hyde, M. (2017) *Change and continuity in social policy; Chile's neoliberal retirement system.* Available at: https://www.researchgate.net/project/ (Accessed on 15th June, 2019).

Bowen, G. A. (2009a) 'Document analysis as a qualitative research method', *Qualitative Research Journal*, 9(2), 27-40.doi: http://doi:10.3316/QRJ0902027 (Accessed on 20th April, 2019).

Bowen, G. A. (2009b) 'Supporting a grounded theory with an audit trail: An illustration', *International Journal of Social Research Methodology,* 12(4), 305- 316.

Boyatzis, R. E. (1998) *Transforming qualitative information: thematic analysis and code development.* Available at: https://psycnet.apa.org/record/1998-08155-000 (Accessed on 8th February, 2020).

Bradley, R. (2016) *How good is Chile's pension system?* Available at: https://www.amchamchile. (Accessed on 13th August, 2019).

Braun, V. and Clarke V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*', 3(2) 77-101 (Accessed on 10th January, 2020).

Braun, V. and Clarke, V. (2012) 'Thematic Analysis', in Cooper, H. (ed.) *APA Handbook of Research Methods in Psychology*, 2, 57-71.

Bretschneider, P. (2017) 'Document review as a qualitative research data collection method for teacher research', SAGE Publications, Ltd.

Broadbent, J. Palumbo, M. and Woodman, E. (2006) 'The shift from defined benefit to defined contribution pension plans: Implications for asset allocation and risk management.' Available at: https://citeseerx.ist.psu.edu/ (Accessed on 20th May, 2019).

Burtless, G. (2013) 'The impact of population ageing and delayed retirement on work productivity', *Center for Retirement Research at Boston College Hovey House 140 Commonwealth Avenue Chestnut Hill,* MA 02467. Available at: http://crr.bc.edu (Accessed on 8th November, 2018).

Cagan, P. (1965) 'The effect of pension plans on aggregate saving: Evidence from a sample survey', in Bhattacharya, J. & Reed, R. (2003). *A positive theory of the income redistributive focus of social security*. Ames, Iowa': Iowa State University.

Caprio, G. and Levine, R. (2002) 'Corporate governance in finance: *Concepts and international observations*. Washington D.C: World Bank.

Castillo-Montoya, M. (2016) 'Preparing for interview research: The Interview Protocol Refinement Framework'. *Qualitative Report*, 21 (5), 811-831.

Centre for Affordable Housing Finance in Africa (2018) *Housing finance in Ghana.* Available at: https://housingfinanceafrica.org/countries/ghana/ (Accessed on 12th December, 2020).

Center for National Studies of Alternative Development (CENDA), (2018) *Dialogue of civilizations research special report: Risking the 20th Century's biggest social gain*. Available at: https://doc-research.org/ (Accessed on 4th April, 2020).

CESifo DICE Report (2015) *The robustness of pension systems: Lessons from the crisis*. Available at: file:///C:/Users/USER/Downloads/dice-report-2015-2-fall-pension-june.pdf,c (Accessed on 14th May, 2020).

Chan, H., Khai, E. and Lim, L. (2016) *Uniquely Singapore, uniquely CPF.* Available at: https://www.csc.gov.sg/articles/uniquely-singapore-uniquely-cpf, (Accessed on 14th May, 2020).

Chen, Y. and Tan, Y. J. (2018) 'The effect of non-contributory pensions on labour supply and private income transfers: evidence from Singapore', *IZA Journal of Labor Policy. IZA Journal of Labor Policy.* doi: 10.1186/s40173-018-0099-3 (Accessed on 5th September, 2019).

Chia, N. C. and Tsui, A. K. (2012) 'Adequacy of Singapore's Central Provident Fund Payouts: Income replacement rates of entrant workers', *SCAPE Working Paper* No. 2013/02. Singapore: National University of Singapore.

Chybalski, F. (2012) 'Measuring the multidimensional adequacy of pension systems in European countries', *The Pensions Institute*. Available at: https://www.researchgate.net/publication (Accessed on 20th March, 2020).

Clark, G. L. (2004) 'Pension fund governance: Expertise and organisational form', *Journal of Pension Economics and Finance,* 3(2) 233-253.doi:10.1017/S1474747204001556 (Accessed on 8th May, 2019).

Clements, B., Eich, F. and Gupta, S. (2014) *Equitable and sustainable pension systems*. Available at: https://www.elibrary.imf.org/view/books/071/ (Accessed on 18th June, 2019).

Collins, D., Tooms-Smith, M., Camanaru, R., Fenton, C., Gloster, R., Silcock, D. and Dodd, T. (2019) 'Planning and preparing for later life: A social survey feasibility study', *Institute for Employment Studies*. Available at: https://www.employment-studies.co.uk. (Accessed on 11th April, 2020).

Corbo V. and Schmidt-Hebbel K. (2003) *The international crisis and Latin America: Growth effects and development strategies*. Available at: http://hdl.handle.net/10419/128223 (Accessed on 10th June, 2020).

CPF Board (2011) *Central Provident Fund Board: Annual report*. Available at: https://www.cpf.gov.sg/Assets/common/Documents/CPF_ (Accessed on 2nd March, 2020).

CPF Board (2019) *Central Provident Fund Board: Annual report*. Available at https://www.cpf.gov.sg/Assets/common/Documents/CPF_ (Accessed on 17th May, 2020).

CPF Retirement Booklet (2019). *Planning your retirement with CPF*. Available at: https://www.cpf.gov.sg/askjamie/user/uploads/CPF%20Retirement%20Planning%20Booklet.pdf (Accessed on 12th December, 2019).

The Central Provident Fund (n.d) *CPF Overview*. Available at: https://www.cpf.gov.sg/Members/AboutUs/about-us-info/cpf (Accessed on 19th November, 2019).

Creswell, J. W. (2007) *Qualitative inquiry and research design: choosing among five approaches.* Thousand Oaks, CA: Sage Publications.

Creswell J.W. (2016) *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications. Available at: https://psycnet.apa.org/record/2006-13099-000 (Accessed on 4th May, 2020).

Cynamon, B. Z. and Fazzari, S. M. (2008) 'Household debt in the consumer age: Source of growth-risk of collapse', *Capitalism and Society,* 3(2), 1-32. Available at: https://www.researchgate.net/, (Accessed on 12th November, 2018).

Darko, E. (2016) *The effectiveness of the current three-tier pension scheme in providing adequate social security for Ghanaians: Evidence from the Eastern region of Ghana.* A thesis presented to University of Ghana. Available at: http://197.255.68.203/handle/123456789/21182 (Accessed on 22nd August, 2018).

David, A. and Petri, M. (2013) 'Inclusive growth and the incidence of fiscal policy in Mauritius-Much progress, but more could be done', *IMF Working Paper* No. 13/116 (Washington: International Monetary Fund).

Dayani D. (2018) 'Complete guide to understanding the "benefit illustration" of CPF life payouts. Available at: https://dollarsandsense.sg/complete (Accessed on 7th November, 2019).

Deerpalsing, N. (2004) 'Social security system in Mauritius', *Ministry of Finance and Economic Development, Mauritius.*

Dei, H. (1997) 'Meeting the challenges of conversion: Ghana's provident funds becomes a pension scheme', *International Social Security Review,* 50(2), 63-71.

Denscombe, M. (2010) *The good research guide: For small-scale social research projects*. England: Open University Press.

Department of Family and Social Affairs (2007) *Green paper on pensions, Dublin: Sun alliance house*. Available at: https://www.cardi.ie/publications/greenpaperonpensions, (Accessed on 8th February, 2020).

Diaw, A. (2017) 'Retirement preparedness in Saudi Arabia', *International Journal of Economics and Financial Issues,* 7(1), 78-86. Available at: https://www.econjournals.com (Accessed on 6th February, 2018).

DiBartolomeo, D. (2012) *The ten fundamentals of pension fund risk management*. Available at: https:// www.northinfo.com/documents/542.pdf on 30/01/2019 (Accessed on 6th June, 2019).

Dixon, J. (2000) African social security systems: An ordinal evaluation', *Journal of Social Development in Africa,* 16(1), 68-83.

Dorfman, T. and Palacios, R. (2012) '*World Bank Support for Pensions and Social Security,* Washinton D.C. : *World Bank.*

Dorfman, M. (2015) *Pension patterns in Sub-Saharan Africa. Social protection and labor discussion paper, no. 1503*. World Bank Group, Washington, DC: World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/22339 (Accessed on 17th July, 2018).

Dorkenoo, K. K. (2006) 'The role of trade unions in reforming social security and pensions in Ghana', *Journal of Labour Education ,* 14(145).

Economist Intelligent Unit Democracy Index (2019). *Mauritius.* Available at: https://country.eiu.com/Mauritius/ArticleList/Analysis/Politics (Accessed on 8th May, 2020).

Ellwood, D. T. (1985) *Pensions, labour, and individual choice*. Chicago: University of Chicago Press.

Elo, S., Kääriäinen, M. and Kanste, O. (2014) *A Qualitative content analysis: A focus on Trustworthiness*. Available at: https://journals.sagepub.com/doi/full/10.1177 (Accessed on 5th January, 2020).

Ervik, R. (2005) 'The batter of future pensions. Global accounting tools, international organizations and pension reforms', *Global Social Policy* 5(1), 29-54.

Etikan, I., Musa, A. and Alkassim, R. A. (2016) 'Comparison of convenience sampling and purposive sampling', *American Journal of Theoretical and Applied Statistics*, 5 (1), 1-4.doi: 10.11648/j.ajtas.20160501.11 (Accessed on 14th August, 2019).

European Actuarial Consultative Group (2012) *Sustainability of pension systems in Europe: The demographic challenge*. Brussels, Belgium: Secretariat, Maison Des Actuaires.

Ezra, D. (2009) 'Defined-benefit and defined-contribution plans of the future financial', *Financial Analysts Journal ,* 63(1), 26-30.

Fajnzylber, E. (2012) 'Implicit redistribution in the Chilean social insurance system', *School of Government, Universidad Adolfo Ibáñez.* Available at: https://www.uai.cl/RePEc/uai/wpaper (Accessed on 10th January, 2021).

Fajnzylber, E. (2019) 'Chile's solidarity pillar: A benchmark for adjoining zero pillar with DC schemes', *Social Protection and Jobs Discussion Paper* no. 1910. Washington, D.C. World Bank Group.

Fall, F. and Bloch D. (2014) ‘Overcoming vulnerabilities of pension systems’, *OECD Economics Department Working Papers* no. 1133, OECD Publishing, Paris. Available at: http://dx.doi.org/, (Accessed on 24th July, 2019).

Farooq, M. B. and De Villiers, C. (2017) ‘Telephonic qualitative research interviews, when to consider them and how to do them’, *Meditari Accountancy Research*, 25(2), 291–316.

Fiifi, D. (2020) *Here is the list of collapsed microfinance companies whose customers expect payment*. Available at: https://ghanaxtra.com/. (Accessed on 15th October, 2020).

Fong, J., Mitchell, O. and Koh, B. (2010) ‘Longevity risk management in Singapore's national pension system’, *Pension Research Council Working Paper,* The Wharton School, University of Pennsylvania.

Fong, J. H. (2020) ‘Taking control: Active investment choice in Singapore’s national defined contribution scheme’, *The Journal of the Economics of Ageing.* 17. Available at: https://doi.org/10.1016/j.jeoa.2020.100249 (Accessed on 16th September, 2019).

Francis, J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. and Grimshaw, M. (2010) ‘What is an adequate sample size? Operationalizing data saturation for theory-based studies’, *Psychology and Health,* 25(10), 1229–1245.

Friedberg, L. and Turner, S. (2010) ‘Labor market effects of pensions and implications for teachers’, *Education Finance and Policy,* 5(4), 463-491.

Frimpong, D. (2019) ‘SEC revokes licenses of 53 fund management companies’, *Graphic Online.* Available at: https://www.graphic.com.gh/, (Accessed on 13th October, 2020).

Frinlander, S. (2012) *Discussion between the World Bank and the ILO*. Available at: https://www.epublications.uef.fi/pub/ (Accessed on 25th January, 2019).

Froyen R. T. (1993) *Macroeconomics –Theories and Policies (4th ed.)* New York: Macmillan.

Fuhrer, J. C. (1992) ‘Do consumers behave as the life-cycle/permanent-income theory of consumption predicts*? New England Economic Review,* 3–14.

Ghana Government Budget (2018) ‘The budget statement and economic policy of the government of Ghana for the 2018 financial year’*, The Budget Statement And Economic Policy of The Government of Ghana*. Available at: https://mofep.gov.gh/budget-statements/2018 (Accessed on 26th April, 2020).

Ghana Population Census (2010) ‘Ghana Statistical Service, 2010’, *Population and Housing Census (PHC) 31st May 2012.* Available at: https://statsghana.gov.gh/ (Accessed on 19th July, 2020).

Ghana Statistical Service (2013) ‘The elderly in Ghana’, *2010 Population and Housing Census Report.* Available at: https://statsghana.gov.gh/gssmain/fileUpload (Accessed on 5th July 2018).

Ghana Statistical Service, (2015) ‘Labour force survey’. Available at: https://statsghana.gov.gh (Accesed on 12th November, 2018).

Gillion, C. (2000) ‘The development and reform of social security pensions: The approach of the international labor office’, *International Social Security Review* 53(1):35-63.

Gillion, C., Turner, J., Bailey, C. and Latulippe, D. (2000) ‘Social security pensions: Development and reform’, *Geneva: ILO.* Available at: https://library.fes.de/pdf-files/gurn/00045.pdf (Accessed on 15th October, 2019).

Gilmour, G. (2013) *The Pinochet regime and Chilean politics*. Available at: https://www.e-ir.info/2013/04/03/the-pinochet-regime-and-chilean-politics/ (Accessed on 3rd March, 2021).

Global Age Watch index, (2015) *Insight report, summary and methodology*. Available at: https://www.helpage.org/ (Accessed on 2nd May, 2020).

Global Metrics (2020) *Chile life expectancy 1950-2020*. Available at: https://www.macrotrends.net (Accessed on 12th April, 2020).

Government of Ghana (2006) *Presidential commission on pensions*. Available at: http://document.worldbank.org, (Accessed on 22nd July, 2020).

Government of Ghana (2018) *Constitutional democracy and the fourth republic - Immigration and refugee board of Canada, constitutional democracy and the fourth republic, 1 November 1992*. Available at: https://www.refworld.org/ (Accessed on 28th July, 2020).

Grech, A. G. (2010) ‘Assessing the sustainability of pension reforms in Europe, London’, *Centre for Analysis of Social Exclusion, London School of Economics* Available at: http://eprints.lse.ac.uk/43865/1/CASEpaper140.pdf (Accessed on 18th May, 2019).

Grosh, M. and Holzmann, R. (2008) ‘Social protection for the poorest: The position and experience of the World Bank’, *Social Protection & Labor Department*.

Guven, M. & Leite, P. (2016) *Benefits and costs of social pensions in Sub-Saharan Africa*. Available at: http:/www.worldbank.org (Accessed on 21st May, 2019).

Guven, M. (2019) *Extending pensions coverage to the informal sector in Africa*. Available at: https://www.myjoyonline.com (Accessed on 12th June, 2020).

HelpAge International (2003) *Non-contributory pensions and poverty prevention: A comparative study of Brazil and South Africa*. Available at: https://www.google.com/url? (Accessed on 18th October, 2019).

Heneghan, M. (2015) 'The rise and fall of the World Bank's global pension model', *Sheffield Political Economic Research Institute.* Available at: http://speri.dept.shef.ac.uk/2015/12/01/the-rise-and-fall-of-the-world-banks-global-pension-model/ (Accessed on 26th May, 2020).

Hess, D. & Impavido, G. (2003) 'Governance of public pension funds: Lessons from coperate governance and international evidence', *Working Paper.* Available at: https://openknowledge.worldbank.org/handle/10986/18125 (Accessed on 8th July, 2020).

Hirschmann, R. (2020) 'Aging population of Singapore', *Statistics & Facts*. Available at: https://www.statista.com/ (Accessed on 11th August, 2020).

West Midlands Pension Fund (2020) *Historical data: West midlands pension fund publishes, on a quarterly basis, historical data relating to investment performance in the Fund*. Available at: https://www.wmpfonline.com/ (Accessed on 10th March, 2021).

Holzmann, R. and Hinz, R. (2005) *Old age income support in the 21st century: An international perspective on pension systems and reform*. Washington, DC: World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/7336 (Accessed on 3rd September, 2019).

Holzmann R., Hinz R.P. and Dorfman M. (2008) 'Pension systems and reforms conceptual framework', *SP Discussion Paper* no. 0824-The World Bank.

Holt, A. (2010) 'Using the telephone for narrative interviewing: A research note', *Qualitative Research,* 10(1), 113-121.

Horioka, C. (2009a) 'The (dis)saving behavior of the aged in Japan', *NBER Working Paper* No. 15601. Available at: https://www.nber.org/system/files/working_papers/w15601/w15601.pdf (Accessed on 13th March, 2018).

Horioka, C. (2009b) *The determinants and long-term projections of saving rates in developing Asia*. Available at: http://www.nber.org, (Accessed on 3rd March, 2020).

Horlacher, D. E. (2002) Aging in Japan: Causes and consequences. Part II: Economic issues', *International Institute for Applied Systems Analysis*. Available at: https//www.pure.iiasa.ac, (Accessed on 19th February, 2019).

Huan W., Jianyuan H. and Qi, Y. (2018) *Assessing the financial sustainability of the pension plan in China: The role of fertility policy adjustment and retirement delay*. Available at: ,https://www.mdpi.com/2071-1050/11/3/883/pdf. , (Accessed on 28th April, 2019).

ICPM (2018) 'Retirement anxiety of informal workers: A view on the Chilean pension system', *ICPM Discussion Forum,* Santiago, Chile. Available at: https://icpm.in1touch.org/document (Accessed on 6th February, 2021).

Iglesias-Palau, A. (2009) 'Reform in Chile revisited: What has been learned?' *OECD Social, Employment and Migration Working Paper* No. 86 Pension. Available at: https://www.oecd.org/els/workingpapers, (Accessed on 16th July, 2019).

ILC (2018) *Greater life expectancy correlates with greater economic productivity*. Available at: https://www.fightaging.org/ (Accessed on 9th April, 2019).

ILO (1944) *Declaration of Philadelphia: The International Labour Organisation*. Available at: https://www.ilo.org/ (Accessed on 25th January, 2019).

ILO (1958) *Discrimination (Employment and Occupation) Convention, 1958 (No. 111)*. Available at: https://www.ilo.org/dyn/normlex/en/ (Access on 18th August, 2021).

ILO (2005) 'The ILO and social protection in the Global South – 1919-2005', *Centre for Social Science Research Working Paper* No. 238. Available at: https://www.cssr.uct.ac.za/. (Accessed on 8th October, 2019).

ILO (2010) 'World social security report 2010: Providing coverage in times of crisis and beyond'*, Geneva: International Labour Office.*

ILO (2012) 'Recommendation 202 – Social protection floors recommendation, 2012 (No. 202)', *ILO*. Available at: https://www.ilo.org, (Accessed on 17th March, 2019).

ILO, (2014a) *Pensions and other social protection benefits of older persons: Insight from the ILO.* Genève: ILO.

ILO (2014b) *World social protection report 2014/15. Building economic recovery, inclusive development and social justice*. Geneva: International Labour Organization.

ILO (2018a) *The ILO Pension Model: A technical guide (Geneva)*. Available at: https://www.social-protection.org/gimi/RessourcePDF (Accessed on 21st January, 2019).

ILO (2018b) *The ILO multi-pillar pension model: Building equitable and sustainable pension systems*. Available at: https://www.ilo.org/ (Accessed on 26th January, 2019).

ILO (2018c) ‘Social protection for older persons: Policy trends and statistics 2017-19’, *ILO Social Protection Policy Paper*, No. 17. Available at: https://www.ilo.org/secsoc/information-resources/publications-and-tools/policy-papers/WCMS (Accessed on 19th June, 2019).

IMF (2004) *Singapore: Financial system stability assessment, including reports on the observance of standards and codes*. Available at: https://www.imf.org/external/pubs/ft/scr/2004 (Accessed on 30th July, 2020).

IMF (2018) *Chile 2018 Article IV Consultation—Press release; Staff report and statement by the executive director for Chile.* Available at: https://www.imf.org (Accessed on 10th July, 2020).

Impavido, G. and Tower, I. (2009) ‘How the financial crisis affects pensions and insurance and why the impacts matter’, *IMF Working Paper, Monetary and Capital Markets Department.*

IndexMundi (2020) *Country facts*. Available at: https://www.indexmundi.com/ghana/ (Accessed on 10th February, 2021).

IOPS (2010) Managing and supervising risks in defined contribution pension systems’, *The International Organisation of Pension Supervisors, Working Paper No. 12*. Available at: https://www.oecd.org/. (Accessed on 10th July, 2020).

IOPS (2014) ‘Stress testing and scenario analysis of pension plans’, *IOPS Working Papers on Effective Pensions Supervision.* Available at: https:// www.iopsweb.org, (Accessed on 2nd November, 2019).

Institute and Faculty of Actuaries Pensions (2018) *Using the world bank criteria to assess seven countries by the IFOA pensions in a global context working*. Available at: https://www.actuaries.org.uk (Accessed on 5th June, 2020).

International Social Security Association (2011) *ISSA database of good practices.* Available at: https://ww1.issa.int/ (Accessed on 2nd May, 2020).

Isiaka, S. B. and Woli-Jimoh, I. A. (2017) ‘Impact of statutory retirement age on youth unemployment in Kwara State, Nigeria’, *Archives of Business Research, 5(*1), 182-192.

Investopedia (2020) *Investopedia.* Available at: *https://www.investopedia.com/terms/a/aaa.asp* (Accessed on 12th November, 2020).

Jackson R., Howe, N. and Nakashika, K. (2010) ‘The global ageing preparedness index’, *Center for Strategic and International Studies*. Available at: https://www.cesifo.com, (Accessed on 16th May, 2020).

James, H., Price, D. and Buffel, T. (2020) ‘Pensions and benefits’, *Centre for Policy on Ageing Information Service*. Available at: https://www.cpa.org.uk., (Accessed on 12th December, 2020).

Jappelli, T. (1995) ‘Does social security reduce the accumulation of private wealth? Evidence from Italian Survey Data’, *Ricerche Economiche,* 41, 1-39.

Jason, D. & Warren, K. (2020), *What (exactly) is Research Methods: A plain-language explanation & definition (with examples)*. Available at: https://gradcoach.com/, (Accessed on 24th May, 2021).

Jensen, M.C. (1998) ‘Self-interest, altruism, incentives and agency theory’, in Jensen, M.C. (ed.), *Foundations of Organizational Strategy*. Cambridge, MA: Harvard University Press.

Johnson, S. and Rasulova, S. (2016) ‘Qualitative impact evaluation: Incorporating authenticity into the assessment of rigour. Econstor’, *Working Papers in International Development and Wellbeing,* no. 45.

Kangas, O. E. (2006) ‘Pensions and pension funds in the making of a nation-state and a national economy’, *Social Policy and Development Programme Paper* no. 25. United Nations Research Institute for Social Development.

Kaplow, L. (2000) ‘A framework for assessing estate and gift taxation’, *NBER Working Paper* no. 7775. Available at: https://www.nber.org/papers/w7775 (Accessed on 18th November, 2019).

Katona, G. (1965) ‘Private pensions and individual saving’*, American Economic Review,* 56(5), 1360-1362. Available at: https://www.jstor.org/stable/1815361 (Accessed on 7th December, 2020).

Kay, J. S. (2003), ‘Pension reform and political risk’, Research Department, Federal Reserve Bank of Atlanta. *A Paper Presented to LASA XXIV International Congress in Dallas in March 2003.*

Kelly, J., Sadeghieh, T. and Adeli, K. (2014) ‘Peer review in scientific publications: Benefits, critiques & a survival guide’, *Journal of International Federation of Clinical Chemistry and Laboratory Medicine (IFCC*). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/ (Accessed on 5th July, 2020).

Kikete, G. (2012) *The effect of regulatory control changes on the financial performance of pension schemes in Kenya*. University Of Nairobi.

Kivunja, C. and Kuyini, A. B. (2017) ‘Understanding and applying research paradigms in educational contexts’, *International Journal of Higher Education*, 6 (5) 26-41. Available at: http://ijhe.sciedupress.com (Accessed on 9th January, 2020).

Koh, B. S., Mitchell, O. S. & Fong, J. H. (2010) 'Collective investments for pension savings: Lessons from Singapore's Central Provident Fund Scheme, *Business Economics and Public Policy Papers*, 15 (2), 100-110. Available at: http://dx.doi.org/10.1057/pm.2009.33 (Accessed 8th November, 2020).

Koh, B. (2014) 'Singapore's social security savings system: A review and some lessons for the United States', *Pension Research Council Working Paper*. The Wharton School, University of Pennsylvania.

Korstjens, I. and Moser, A. (2018) 'Practical guidance to qualitative research', *European Journal of General Practice*. Available at: https://doi.org/10.1080 (Accessed on 30th January, 2019).

Kotlikoff, L. and Summers, L. (1981) 'The role of intergenerational transfers in aggregate capital accumulation', *Journal of Political Economy*, 89, 706–32.

Kpessa, M. W. (2010) 'The politics of retirement income security policy in Ghana: Historical trajectories and transformative capabilities', *African Journal of Political Science and International Relations,* 5(2), 92-102.

Kpesssa, M. W. (2011) 'A comparative analysis of pension reforms and challenges in Ghana and Nigeria', *International Social Security Review,* 62(2), 91-109.

Krishnan, V. S. and Cumbie, J. (2016) 'Defined benefits plans vs defined contribution plans: An evaluation framework using random returns'*, A Paper Presented at the Annual Conference of Academy of Financial Services.*

Kritzer, B. E. (2008) 'Chile's next generation pension reform', *Social Security Bulletin*, 68, (2) Available at: https://www.ssa.gov/policy/docs/. (Accessed on 26th August, 2019).

Kumado, K. and Gockel, A. (2003) 'A study on social security in Ghana, Accra', *Trades Union Congress.* Available at: http://library.fes.de/pdf-files/bueros/ghana/50022.pdf (Accessed on 15th April, 2021).

Kwabla-King, D. (2017) 'Solvency and sustainability of the SSNIT Pension Scheme', *Journal of Bussiness & Finance ,* 6(4), 1-5.

Kvale, S. (2006) 'Dominance through interviews and dialogues', *Qualitative Inquiry*, *12*(3), 480–500. Available at: https://researchdesignreview.com (Accessed on 15th January, 2020).

Laurence J., Kotlikoff, L. and Summers, H. (1980) 'The role of intergenerational transfers in aggregate capital accumulation', *NBER Working Paper* no. 445.

Lazear, E. (1985) ‘Incentive effects of pensions’, in Wise, D. (ed.), *Pensions*, *labor and individual choice*, Chicago: University of Chicago Press, 253-282.

Lee, J. (2010) ‘Data set on pension and health: Data collection and sharing for policy design’, *International Social Security Review*, 63 (3-4), 197-222.doi:/doi.org/10.1111/j.1468-246x.2010.01375.x. (Accessed on 4th October, 2019).

Leedy, P. and Ormrod, J. E. (2014) *Practical research planning and design* (10th ed). Edinburgh: Pearson Educational Inc.

Levy, S. and Schady, N. (2013) ‘Latin America's social policy challenge: Education, social insurance, and redistribution’, *Journal of Economic Perspectives,* 27 (2) 193-218.doi: 10.1257/jep.27.2.193. (Accessed on 18th March, 2019).

Lichtman, M. (2013) *Qualitative research in education: A user’s guide* (3rd ed.). USA: SAGE Publication.

Lincoln, Y. S. and Guba, E. G. (1985) *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.

Lincoln, Y. S. and Guba, E. G. (1994) *Research essentials*. Available at: https://www.proquest.com. (Accessed on 14th June, 2019).

Lipschultz, J. (2010) *Overcoming the challenges of the telephone interview*. Available at: https://www.aol.com/ (Accessed on 3rd October, 2020).

Logue, J. (1979) ‘The welfare state: Victims of its success’, *American Academy of Arts and Sciences, 108 (4), 69-87.*

Loke, V. (2009) *Singapore's Central Provident Fund*. Available at: https://www.newamerica.org/ (Accessed on 14th May, 2020).

MacEwen, A. (2012) ‘Working after age 65’, *Canadian Labour Congress and a CCPA Research*. Available at: https://webcache.googleusercontent.com (Accessed on 21st April, 2020).

Mackenzie, N. and Knipe, S. (2006) ‘Research dilemmas: Paradigms, methods and methodology’. *Issues In Educational Research,* 16 (2). Available at: https://www.iier.org.au/iier16/mackenzie.html (Accessed on 11th May, 2020).

Maier-Rigaud. (2005) *Implications of pension ideas for organized labor—the role of World Bank and International Labor Organization*. Available at: http://document.worldbank.org (Accessed on 19th March, 2019).

Malhotra, N. K. and Dash, S. (2011) *Marketing research: An applied orientation*. New Delhi, India: *Pearson.*

Mankiew, G. (2010) *Macro Economics* (7th ed.). New York: U.S.A :Worth Publishers.

Mannaris, P. (2012) 'The Cypriot pension system: Adequacy and sustainability', *Cyprus Economic Policy Review,* 6(2), 49-58.

Marks, D. and Yardley, L. (2004) *Research methods for clinical and health psychology*. SAGE.

Martin, J. (2015) 'Transformational and transactional leadership: An exploration of gender, experience, and institution type', *ERIC,* 15(2), 331-351.

Martišková, A. and Sika, P. (2016) 'Sustainability of the pension system of the Slovak Republic in the changed socio-economic conditions', *Journal of Security and Sustainability Issues,* 6(1), 113–123.

Mauritius Commission on Population and Development (MCPD-2019) *Fertility rate, total births per woman – Mauritius.* Available at: https://data.worldbank.org/ (Accessed on 15th May, 2020).

Mauritius Financial Services Commission (2015) *Financial services commission – Mauritius 2015.* Available at: https://www.fscmauritius.org/media/2316/fsc-annual *(*Accessed on (20th July, 2020).

Mauritius Financial Services Commission Statistical Bulletin (2012) *Financial services commission Mauritius-Statistical Bulletins: Available at:* https://www.fscmauritius.org/en/statistics/statistics (Accessed on 5th May, 2020).

Mauritius Government (2013) *Government directory*. Available at: https://govmu.org/EN/Pages/ (Accessed on 22nd October, 2019).

Mba, C. J. (2010) Population ageing in Ghana: Research gaps and the way forward. *Journal of Ageing Research.* doi: https://doi.org/10.4061/2010/672157 (Accessed on 12th June, 2020).

McGill, D. M., Brown, K. N., Haley, J. J. and Schieber, S. J. (2005) *Total retirement income: setting goals and meeting them in fundamentals of private pensions*. New York, NY: Oxford University Press.

Meade, J. E. (1961) *The economic and social structure of Mauritius: Report to the Governor of Mauritius*. London: Metheun.

Meade, J. E. (1968) *The economic and social structure of Mauritius. Available at:* https://academic.oup.com (Accessed on 13th July, 2020).

Melbourne Mercer (2012) *Melbourne Mercer Global Pension Index*. Available at: http://www.globalpensionindex.com/ (Accessed on 9th January, 2019).

Melbourne Mercer (2017) *Melbourne Mercer Global Pension Index* Available at: http://www.globalpensionindex.com/ (Accessed on 16th February, 2020).

Melbourne Mercer (2019) *Melbourne Mercer Global Pension Index*. Available at: http://www.globalpensionindex.com/ (Accessed on 11th January, 2021).

Mercer (2021) *Global Pension Index 2021.* Available at: https://www.investopedia.com/ (Accessed on 12th July, 2021).

Merriam, S. B. (2002) *Qualitative research in practice: Examples for discussion and analysis*. San Francisco, CA: Jossey-Bass.

Merton, R. (1985) 'Implicit labor contracts viewed as options: a discussion of insurance aspects of pensions', in Wise, D. (ed.) *Pensions, labor and individual choice*. Chicago: University of Chicago Press.

Mesa-Lago, C. and Bertranou, F. (2016) 'Pension reforms in Chile and social security principles (1981-2015)', *International Social Security Review*. 69.(1), 25-45. doi:10.1111/issr.12093 (Accessed on 18th November, 2019).

Ministry of Manpower, Singapore (2017) *Responsible re-employment*. Available at: https://www.mom.gov.sg/ (Accessed on 4th November, 2019).

Mitchell O. S. and Ruiz J. (2009) *Pension payouts in Chile: Past, present, and future prospects*. Available at: https://pensionresearchcouncil.wharton.upenn.edu/ (Accessed on 22nd April 2020).

Modigliani, F. and Brumberg, R. H. (1954) 'Utility analysis and the consumption function: An interpretation of cross-section data', *Journal of Post-Keynesian Economics,* 388-436.

Modigliani, F. (1986) 'Life-cycle, individual thrift and the wealth of nations', *American Association for the Advancement of Science. Science, New Series*, 234 (477), 704-712. Available at: https://www.jstor.org/table/1697934, (Accessed on 21st May, 2020).

Modigliani, F. and Jappelli, T. (1998) 'The age-saving profile and the Life-Cycle Hypothesis'. *Centre For Studies In Economics And Finance*, 9, 1-30.

Mohajan, H. (2018) 'Qualitative research methodology in social sciences and related subjects', *Journal of Economic Development, Environment and People,* 7, (1), 23-48.

Morgan, D. L. (2007) 'Paradigms lost and pragmatism regained methodological implications of combining qualitative and quantitative methods', *Journal of Mixed Methods Research*, 1(1), 48-76.

Mulligan, C. B. and Sala-i-Martin, X. (2000) 'Transitional dynamics in two-sector models of endogenous growth', *Quarterly Journal of Economics,* 28(3), 739-774.

Mulligan, R. F. (2014) 'The central fallacy of Keynesian Economics'. *Quarterly Journal of Austrian Economics,* 17 (3), 338-364.

Munnell, A. H., Golub-Sass, A., Haverstick, K., Soto, M. and Wiles, G. (2008) 'Why have some states introduced defined contribution plans?'. *Center for Retirement Research.* Available at: https://crr.bc.edu/wp-content/uploads/2008/01/slp_3.pdf (Accessed on 14th October 2020).

Murphy, P. L. and Musalem, A. R. (2004) 'Pension funds and national saving', *World Bank Policy Research Paper* no. 3410.

Naidu-Ghelani, R. (2012) *Countries with aging populations*. Available at: https:/www.cnbc.com (Accessed on 17th April, 2020).

National Pension Act 2008, Act 766 (Ghana) Part One—'Establishment of contributory three-tier pension scheme and national pension regulatory authority'. Available at: https://www.ssnit.org.gh/ (Accessed on 12th May, 2020).

National Pensions Amendment Act 2014, Act 883 (Ghana) 'Centre for affordable housing finance in Africa'– Ghana'. Available at: https://housingfinanceafrica.org/. (Accessed on 23rd January, 2020).

Nesadurai, H. E. (2006) 'Conceptualising economic security in an era of globalisation: What does the East Asian experience reveal?', in Helen E. S. (ed.) *Globalisation and economic security in East Asia: Governance and institutions*. London: Routledge, 3-22.

Ng, E. (n.d) *Central Provident Fund in Singapore: A capital market boost or a drag?* Available at: https://www.cpf.gov.sg/Assets/common/Documents/CPF (Accessed on 20th November, 2019).

NPRA (2018) *Annual report*. Available at: https://npra.gov.gh/npra-publications/annual-report/ (Accessed on 10th March, 2020).

Nyalatorgbi, E. (2018) 'Bank of Ghana closes seven banks in banking crisis', *African Agenda*, 21 (3) 33-35. Available at: http://twnafrica.org/, (Accessed on 18th July, 2020).

Obiri-Yeboah, D. A. and Obiri-Yeboah, H. (2014) 'Ghana's pension reform in perspective: Can the pension benefits provide a house a real need of the retiree?', *European Journal of Business & Management,* 6(32), 1-13.

Ofori-Tenkorang, J. (2017) 'Trouble at SSNIT: Contributors worried over pension scheme', *Daily Graphic (No. 20488*) 20 September, 1, 3.

Ofori-Tenkorang , J. (2020) *50% of SSNIT contributors earn less than GH₵ 1,100*. Available at: https://goldstreetbusiness.com/2020/general-news/ (Accessed on 24th January, 2021).

Okine, R. (2012) 'The new pension scheme in Ghana: Critical review of prospect', *Journal of Management Science*, 67(2), 12-109.

O'Leary, Z. (2014) *The essential guide to doing your research project (2nd ed.)*. Thousand Oaks, CA: SAGE Publications Inc.

Oltmann, S. (2016) 'Qualitative interviews: A methodological discussion of the interviewer and respondent contexts', *Qualitative Social Research,* 17 (2).

OECD (n.d) *About the Central Provident Fund*. Available at: https://www.oecd.org/finance/private-pensions/46260911.pdf (Accessed on 18th September, 2019).

OECD (2000) *OECD Annual Report 2000*. Available at: https://www.oecd-ilibrary.org/ (Accessed on 2nd March, 2020).

OECD (2011) *Review of the private pensions system*. Available at: https://www.oecd.org/. (Accessed on 14th April, 2020).

OECD (2013) 'Pensions at a glance 2013: OECD and G20 indicators', *Organisation for Economic Cooperation and Development.* Paris, France.

OECD (2015) *Pensions at a glance, 2015: OECD and G20 indicators*. Paris: OECD Publishing.

OECD (2017) *Pensions at a glance, 2017: OECD and G20 Indicators*. Paris: OECD Publishing.

OECD (2018) *Pensions at a glance, Asia/Pacific 2018*. Available at: https://www.oecd.org/publications (Accessed on 1st December, 2019).

OECD (2019) *Net pension replacement rates (indicator)*. doi: 10.1787/4b03f028 (Accessed on 13 August 2020).

OECD/IOPS (2017) *Care for the future: Think of pensions*. Available at: https://www.oecd.org/ (Accessed on 10th April, 2019).

OECD/IOPS Global Forum Session- II (2019) *2019 OECD/IOPS global forum on private pensions*. Available at: https://www.oecd.org/ (Accessed on 8th August, 2020).

Ortiz, I., Duran-Valverde F., Urban S. and Wodsak V. (2018) 'Reversing pension privatizations: Rebuilding public pension systems in Eastern Europe and Latin America.', *International Labour Office* – Geneva: ILO.

Orszag, P. R. and Stiglitz, J. E. (1999) 'Rethinking pension reform: Ten myths about social security Systems', *Presented at the World Bank Conference*, "New Ideas About Old Age Security". Available at: http://citeseerx.ist.psu.edu/viewdoc/download (Accessed on 11th February, 2018).

Osei, K. (2005) 'Risk management: The experience of the Social Security and National Insurance Trust', in *Social Security in the African Context.* Abidjan: ISSA.

Oyemwinmina, C. and Edomwonyi, J. (2016) 'The perception of the contributory pension scheme administration by the staff of University of Benin', *African Research Review*. 10(3), 261-278.doi: https://doi.org/10.4314/afrrev.v10i3.17 (Accessed on 17th October, 2019).

Paklina, N. (2018) 'Impact of digitalisation of financial services on pension supervisory practices: Case studies, *IOPS Working Papers on Effective Pensions Supervision*, no.33.

Palacios, E. and Whitehouse R. (2006) 'Civil-service pension schemes around the world', *MPRA Paper* no. 14796. Available at: https://mpra.ub.uni-muenchen.de/14796, (Accessed on 17th September, 2020).

Palley, I. T. (2002) 'Economic contradictions coming home to roost? Does the U.S. economy face a long-term aggregate demand generation problem?' *Journal of Post Keynesian Economics,* 25 (1), 9-32.doi: https://doi.org/10.1080/01603477.2002.11051345 (Accessed on 21st May, 2019).

Patton, M. Q. (1987*) How to use qualitative methods in evaluation (2nd ed.)*. Newbury Park, CA: Sage Publications.

Patton, M. Q. (1990) *Qualitative research and evaluation methods, (2nd ed.).* Newbury Park: *Sage Publications.*

Patton, M. Q. (2015) *Qualitative research and evaluation methods (4th ed.)*. Thousand Oaks, California: Sage Publication.

Pension Fund Online (n.d) *Pension system in Singapore*. Available at: https://www.pensionfundsonline.co.uk/ (Accessed on 18th September, 2019).

Pension System Reform Bill (2018) *Chile: The government struggles to implement its reform programme.* Available at: https://www.europarl.europa.eu/ (Accessed on 7th March, 2020).

Phang, S.Y. (2001) 'Housing policy, wealth formation and the Singapore economy', *Journal of Housing Studies* 16 (4), 443-459.doi. https://doi.org/10.1080/02673030120066545 (Accessed on 4th December, 2019).

Pratap, A. (2019) *Research design and its types: Exploratory, descriptive and causal*. Available at: https://notesmatic.com/ (Accessed on 16th January, 2020).

Pundarik, M. and Sunil, V. (2014) 'Old-age income insecurity in Singapore: A problem of non-inclusive development, *Australian Economic Papers*. 5 (3-4), 184-206.

Ramaswamy, S. (2012) 'The sustainability of pension schemes', *BIS Working Paper,* 368, 1-20.

Ramesh M. (2006), 'Singapore's multi-pillar system of social security', *KDI-World Bank Conference on "Multi-Pillar Model of Social Safety Net.* Available at: https://www.kdi.re.kr/upload/8036/4.pdf (Accessed on 12th August, 2019).

Rashid, Y., Rashid, A., Warraich, M., Sabir, S. and Waseem, A. (2019) 'Case study method: A step-by-step guide for business researchers', *International Journal of Qualitative Methods*. 18, 1-13.doi: https://doi.org/, (Accessed on 20th June, 2020).

Rehman, A. and Khalid-Alharth, K. (2016) 'An introduction to research paradigms', *International Journal of Educational Investigations,* 3 (8), 51-59. Available at: https://www.ijeionline.com. (Accessed on 7th April, 2019)

Remery, C., Schippers J. and Ekamper, P. (2003) 'Managing an aging workforce and a tight labour market: Views held by Dutch employers'*, Population Research and Policy Review*, 22, 21-40.

Republic of Mauritius (2019) *Population and vital statistics.* Available at: https://statsmauritius.govmu.org/ (Accessed on 7th April 2020).

Rocha, R., Hinz, R. and Gutierrez, J. (2009) *Improving the regulation and supervision of pension funds. Are there lessons from the banking sector?* Washington D.C.: World Bank.

Rodarte, C., Ward, F., Meryam, O. and Tim, A. (2015) *Sustainability and your pension scheme: Why it matters and what you can do*. UK: LCP.

Rodrigo, A. R. and Augusto, I. P. (2001) *Chile's pension reform after 20 years*. Available at: https://documents.worldbank.org/ (Accessed on 2nd April, 2021).

Rohter, L. (2006) 'Chile rethinks its privatized pension system', *New York Times*, 10 January, Available at: https://www.nytimes.com/ (Accessed on 15th February, 2020).

Roller, M. and Lavrakas, P. J. (2015) 'Strengths and limitations of the in-depth interview method: An overview. https://www.researchdesignreview.com/ (Accessed on 28th January, 2020).

Romero-Robayo, C. and Whitehouse, E. (2015) 'Pension indicators – Realiable statistics to improve pension policy making', *World Bank Core Course on Pension Reforms*, Washington D.C.

Ruiz-Tagle, J. V. and Castro, F. (1998) 'Maintaining prosperity in an ageing society: The OECD study on the policy implications of ageing', *The Chilean Pension System Working Paper AWP* 5.6.

Sala-i-Martin, X. (1996) ‘A positive theory of social security’, *Journal of Economic Growth*, 1(2), 277-304.

Saumure, K. and Given, L. (2008) ‘Rigor in qualitative research’, *Research Gate.* Available at: https://www.researchgate.net/ (Accessed on 8th November, 2019).

Saunders, M. (2012) ‘Choosing research participants’, in Symon, G. and Cassell, C. (eds.), *Qualitative organizational research: Core methods and current challenges*. London: *Sage*, 35-52.

Saunders, M. and Townsend, K. (2016) ‘Reporting and justifying the number of interview participants in organization and workplace research’, *British Journal of Managemen*t, 27(4) 836-852.

Scheiber, S. J. (2004) ‘Retirement income adequacy: Good news or bad?’ *Benefits Quarterly*, 20(4), 27-39.

Schmidt-Hebbel, K. (1999) ‘Chile’s pension revolution coming of age’, *Deutsches Institut für Altersvorsorge, Cologne.* Available at: https://citeseerx.ist.psu.edu/viewdoc/download (Accessed on 21st August, 2019)

Schwandt, T. A., Lincoln, Y. S. and Guba, E. G. (2007) ‘Judging interpretations: But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation’, *New Directions for Evaluation*, 2007 (114), 11- 25. Available at: www.https://doi: 10.1002/ev.223 (Accessed on 12th August, 2020).

Seekings, J. (2011) ‘British colonial policy, local politics, and the origins of the Mauritian Welfare State’, *The Journal of African History*, 52 (2), 157-177.

Seidman, I. (2015) *Interviewing as qualitative research: A guide for researchers in education and the social sciences (4th ed.)*. New York: Teachers College Press.

Sen, A. (1995) ‘The political economy of targeting,’ in Van de Wall, D. and Nead, K. (eds.) *Public spending and the poor: Theory and evidence*. Baltimore: The John Hopkins University Press.

Seng, L. T. (2014) *Central Provident Fund*. Available at: https://eresources.nlb.gov.sg/ (Accessed on 11th September, 2019).

Shaw, K. & Waite, K. (2015) ‘Exploring the pension ‘X-factor’ for generation Y men’, *Journal of Financial Service Marketing* 20 (2), 122–132. Available at: https://doi.org/10.1057/fsm.2015.7. (Accessed on 25th August, 2019).

Shelton, A. M. (2012) ‘Chile’s pension system: Background in brief’*, Congressional Research Servic*e. Available at: https://www.hsdl.org/?view&did=707798 (Accessed on 4th May, 2019).

Singapore Budget *(2020) Ministry of Finance, Singapore, - Budget 2020: Advancing as one Singapore*. Available at: https://www.mof.gov.sg/news (Accessed on 15th October, 2020).

Singapore's Department of Statistics (2016) *Department of Statistics, Ministry of Trade & Industry, Republic of Singapore – Population trends, 2016*. Available at: https://www.singstat.gov.sg/, (Accessed on 15th November, 2019).

Singapore Ministry of Education (2020) *Education Statistics Digest (ESD) - Research and management Information Division Ministry of Education Singapore.* Available at: https://www.moe.gov.sg/ (Accessed on 28th December, 2020).

Skirbekk, V. (2004) 'Age and individual productivity: A literature survey', *Vienna Yearbook of Population Research*, 2 (1) 133-154. Available at: https://www.econpapers.repec.org (Accessed on 12th May, 2020).

Sock-Yong, P. (2007) 'The Singapore model of housing and the welfare state. Housing and the new welfare state: Perspectives from East Asia and Europe', *Research Collection School of Economics,* 15-44. Available at: https://ink.library.smu.edu.sg/soe_research/596 (Accessed on 9th June, 2019).

Soto, M. (2005) 'Chilean Pension Reform: The good, the bad, and the in between', *Center for Retirement Research at Boston College,* 4 (1), 107-118. Available at: https://crr.bc.edu/ch (Accessed on 11th September, 2019).

Soto, M., Thakoor, V. and Petri, M. M. (2015) 'Pension Reforms in Mauritius: Fair and Fast—Balancing Social Protection and Fiscal Sustainability*', International Monetary Fund*. Available at: https://www.imf.org/en/Publications/WP/Issues/2016/12/31 (Accessed on 11th June, 2020).

Squires, L.W. (1912) *Old age dependency in the United States*. New York: Macmillan.

SSNIT Annual Report (2016) Available at: https://www.ssnit.org.gh (Accessed on 17th March, 2000).

Stańko, D. (2019) 'Design and supervision of pension projections in 26 jurisdictions', *IOPS Working Papers on Effective Pensions Supervision*, No.34.

Statista (2020) *Rate of home ownership in Singapore from 2011 to 2020.* Available at: https://www.statists.com, (Accessed on 3rd March, 2021).

Statistics Mauritius (2014) *Mauritius digest of demographic statistics 2014.* Available at: http://ghdx.healthdata.org/record/mauritius-digest-demographic-statistics-2014 (Accessed on 13th November, 2019).

Stewart, F. and Yermo, J. (2009) ‘Pensions in Africa’, *OECD Working Papers on Insurance and Private Pensions, No. 30.*doi:10.1787/227444006716. (Accessed on 17th October, 2019).

Stiglitz, J. E. (2004) ‘Designing a proper social security system is vital for China to get continued success’, *Social Science Documentation Publishing House.*

Sturges, J. E. and Hanrahan, K. J. (2004), ‘Comparing telephone and face-to-face qualitative interviewing: A research note’, *Qualitative Research,* 4 (1), 107-118.

Superintendence of Pensions (2009) *The Chilean pension system*. Available at: https://www.spensiones.cl/portal/institucional/ (Accessed on 15th May, 2020).

Superintendence of Pensions (2019) *Report of The Superintendent of Pensions on the administration of the Pension Benefits Act for the year ending March 31, 2019*’ Available at: https://www.novascotia.ca/finance/pensions/docs/ (Accessed on 12th June, 2020).

Sutton, J. and Austin, Z. (2015) ‘Qualitative research: Data collection, analysis, and management’, *The Canadian Journal of Hospital Pharmacy*, 68 (3), 226 – 231. Available at: https://www.ncbi.nlm.nih.gov/ (Accessed on 11th July, 2019).

Tabellini, G. (2000) ‘A positive theory of social security’, *The Scandinavian Journal of Economics* 102 (2) 523-45. Available at: http://www.jstor.org/stable/3440633, (Accessed on 13th May, 2019).

Teegavarapu, S., Summers, J. and Mocko, G. (2009) *Case study method for design research: A justification*. Available at: https://asmedigitalcollection.asme.org/ (Accessed on 17th November, 2019).

Telesur (2019) ‘Chileans take to the streets to reject current pension model’: *News Chile*, 31 March, Available at: https://www.telesurenglish.net/news/ (Access on 15th December, 2020).

Titmuss, R. M., Abel-Smith, B. and Lynes, T. (1961) ‘Social policies and growth in Mauritius’, report to the Governor of Mauritius’, T*itmuss Report, Mauritius Legislative Council Sessional* Paper No. 6.

Titmuss, R. M. and Abel-Smith, B. (1968) *Social policies and population growth in Mauritius* Available at: https://academic.oup.com/ (Accessed on 13th May, 2020).

Tuan, H. N., Woan-Ying, T., Nya-Ling, T. and Ying, S. L. (2011) ‘Influence of investment experience and demographic factors on retirement planning intention’*, International Journal of Management,* 6(2), 196-208.

Turner, J. A. (1996) *Economic analysis of mandatory defined contribution pension system.* Available at: https://www.researchgate.net. (Accessed on 27th January, 2019).

Turner, J. A. (2010) 'Pension policy: The search for better solutions', *Institute for Employment Research.* Available at: https://doi.org/10.17848/9780880994781 (Accessed on 3rd November, 2019).

United Nations Population Prospects (2010) *United Nations-The 2010 Revision.* Available at: Available at: https://esa.un.org/wpp/ (Accessed on 12th December, 2019).

United Nations Population Prospects (2020) *United Nations - Department of Economic and Social Affairs*. Available at: https://www.un.org/ (Accessed on 10th February, 2021).

Van, O., Jan, C. and Stoeldraijer, L. (2010) 'Age, wage and productivity', *CEPR Discussion Paper 7713.* Available at: https://www.cepr.org/pubs/new-dps/show (Accessed on 12th November, 2018).

Verbon, H. (2012) *The evolution of public pension schemes.* Springer Science & Business Media.

Verhaegen, P. and Salthouse T. A. (1997) 'Meta-analyses of age-cognition relations in adulthood: Estimates of linear and nonlinear age effects and structural models', *Psychological Bulletin,* 122 (3), 231-249.

Vickerstaff, S., Macvarish , J., Taylor-Gooby, P., Loretto, W. and Harrison, T. (2012) *Trust and confidence in pensions: A literature review*. Available at: https://www.researchgate.net/publication (Accessed on 29th July, 2021).

Vittas, D. (2003) 'The role of occupational pension funds in Mauritius', *World Bank Policy Research Working Paper* 3033. Available at: https://openknowledge.worldbank.org (Accessed on 17th September, 2019).

Vogl, S. (2013) 'Telephone versus face-to-face interviews: Mode effect on semi-structured interviews with children', *Sociological Methodology*, 43 (1), 133-177.

Walia, R. (2015). 'A saga of qualitative research', *Social Crimonol*, 5(2), 124.

Wang, P., Zhang, M., Shand, R. and Howell, K. E. (2014) 'Retirement, pension systems and models pension systems', *Economics Working Paper,* 1-17.

Westerman W. and Mpinga Z., (2017) 'Public pension fund structure and mechanisms: A case study of the Tanzanian pension fund system', *The Central European Review of Economics and Management,* 1(1), 135-159.

Whitehouse, E. (2014) 'Earnings related schemes: Design, options and experience', *World Bank Core Course*, Washington DC.

Wickramanayake, J. (1998) 'Central Provident Fund and savings in Singapore': An empirical analysis' , *Savings and and Develpoment*, 12(4) 435-454.

Willmore, L. (2000) 'Three pillar of pensions? A proposal to end mandatory contributions', *International Institute for Applied System Analysis (IIASA)*. Available at: https/:www.researchgate.net/ (Accessed on 12th November, 2018).

Willmore, L. (2001) 'Universal pensions in low-income countries', *Initiative for Policy Dialogue Discussion Paper*. Available at: https://www.geocities.com/, (Accessed on 8th February, 2020.

Willmore, L. (2003) 'Universal pensions in Mauritius: Lessons for the rest of us', *United Nations DESA Discussion Paper* No. 32. Available at: https://ssrn.com/abstract=398280 (Accessed on 21st January, 2020).

Willmore, L. (2007) 'Universal pensions for developing countries', *World Development,* 35(1), 24-51.

Wilson, P. (2011) *Challenges for the Singapore economy after the global financial crisis*. Available at: https://www.amazon.com/Challenges-Singapore-Economy-Global-Financial/dp/9814343935 (Accessed on 10th February, 2020).

Wise, D. (1985) *Pensions, Labor and Individual Choice*. Chicago: University of Chicago Press.

Wood, A., Wintersgill, D. and Baker, N. (2012) 'Pension landscape and charging: quantitative and qualitative research with employers and pension providers', *Research Summary, 804 DWP.*

World Bank (1994) *Averting the old age crisis: Policy to protect the old and promote growth*. Oxford: Oxford University Press.

World Bank (2004) Mauritius: Modernizing an advanced pension system', *Report No. 29588-MU*. Available at: https://documents1.worldbank.org (Accessed on 9th April, 2019).

World Bank Country Study (2005) *Household risk management and social protection in Chile*. Washington DC: The World Bank.

World Bank (2005a) *Pension reform and the development of pension systems: An evaluation of the World Bank assistance*. Washington D.C: The World Bank.

World Bank (2005b) 'Second pillar schemes: Defined benefit schemes, defined contribution schemes or hybrid schemes?', *Supplementary Paper* No. 5.

World Bank (2008) *Pension reform and the development of pension system: An evaluation of the World Bank assistance*. Washington D.C: The World Bank.

World Bank (2014) *The World Bank Annual Report 2014*. Washington, DC: World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/20093 (Accessed on 12th May, 2020).

World Bank (2015) 'Pension patterns and challenges in Sub-Saharan Africa', *World Bank Pensions Core Course.* Available at: https://olc.worldbank.org/ (Accessed on 5th July, 2020).

World Bank (2019) *Early access to pension savings: International experience and lessons learnt.* Available at: https://www.openknowledge.worldbank.org (Accessed on 28th February, 2020).

World Data Atlas (2020) *Sub-Saharan Africa: Ghana - Labor and social protection* Available at: https://knoema.com/ (Accessed on 2nd January, 2021).

World Economic Forum (2017) *Case studies in retirement system reform*. Available at: https://www.weforum.org/ (Accessed on 25th June, 2020).

World Economic Situation and Prospects (2012) *United Nations Department of Economic and Social Affairs*. Available at: https://www.un.org/en/development/desa/policy (Accessed on 10th May, 2019).

World Economic Situation and Prospects (2014) *United Nations Conference on Trade and Development*. Available at: https://unctad.org/en/PublicationsLibrary/wesp2014_en.pdf (Accessed on 28th May, 2021).

World Factbook (2020) *Central Intelligence Agency of United States*. Available at: https://www.cia.gov/the-world-factbook/ (Accessed on 23rd March, 2021).

World Bank Human Capital Index (2018) *Human Capital Index (Scale 0-1) – Singapore.* Available at: https://data.worldbank.org/ (Accessed on 9th July, 2020).

World Population Prospect (2019) *World population prospects 2019: Highlights, Department of Economic and Social Affairs*. Available at: https://www.un.org/ (Accessed on 15th December, 2020).

Yermo, J. (2008) 'Governance and investment of public pension reserve funds in selected OECD countries', *OECD Working Papers on Insurance and Private Pensions, No. 15*. Available at: http://www.oecd.org/dataoecd/26/53/40194872 (Accessed on 9th October, 2019).

Žukauskas, P., Vveinhardt, J. and Andriukaitienė, R. (2018) *Philosophy and paradigm of scientific research*. Available at: https://www.intechopen.com/ (Accessed o0n 9th January, 2020).

Zurich (n.d) *The defined benefit difference*. Available at: https://www.zurich.ie/pensions-retirement/faqs/defined-benefit-versus-defined-contribution/ (Access on 27th January, 2019).