AGENCY FOR INTERNATIONAL DEVELOPMENT
PPC/CDIE/DI REPORT PROCESSING FORM

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number

2. Contract/Grant Number

Trade and Investment Reform Program (TIRP)
USAID Contract Number: 641-C-00-98-00229

3. Publication Date

June 1999

4. Document Title/Translated Title

Part A
SSNIT Pension Fund and Investment Management

5. Author (s)

1. HRK Associates Inc. & Duggleby Associates Inc.

6. Contributing Organization (s)

Sigma One Corporation

7. Pagination

48

8. Report Number

CLIN 4.4

9. Sponsoring A.I.D. Office

USAID. Mission to Ghana

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)

1. Ghana
2. Pension Fund
3. Trade and Investment Reform
4. Financial Intermediation
5. Social Security
6. Investment Management

12. Supplementary Notes

13. Submitting Official

Barbara Pietuch

14. Telephone Number

(919) 361-9800

15. Today's Date

10/08/03

.....DO NOT write below this line.....

16. DOCID

17. Document Disposition

DOCRD [ ] INV [ ] DUPLICATE [ ]

AID 590-7 (10/88)

A

Part A
SSNIT Pension Fund and Investment Management

Sigma One Corporation

June 1999

B

Sigma One Corporation (U.S. Office)
Post Office Box 12836
Research Triangle Park, North Carolina 27709-2836

Phone: (919) 361-9800
Fax: (919) 361-5858
Email: sigma1@sigmaone.com

Part A
SSNIT Pension Fund and Investment Management

Submitted to:

U.S. Agency for International Development
Mission to Ghana

for:

Trade and Investment Reform Program (TIRP)
Improved Policy Reform and Financial Intermediation
USAID Contract Number: 641-C-00-98-00229

Prepared by:

HRK Associates Inc. & Duggleby Associates Inc.

For:

Sigma One Corporation

In fulfillment of the following milestones:

4.4 Review of the Social Security and national Insurance Trust and other elements of the Pension System with a view toward Modernization

June 1999

Sigma One Corporation

d

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View towards Modernisation

Part A: Pension Fund and Investment Management

Table of Contents

Acronyms

CD	Certificate of Deposit
CIBA	Confederation of Indigenous Business Associations
CSIR	Council for Scientific and Industrial Research
ESB	End of Service Benefits
FI	Fixed Income (Asset)
HFC	Home Finance Company
GAM	Group Annuity Mortality
GNAT	Ghana National Association of Teachers
GSCSA	Ghana Cooperative Susu Collectors Association
MIS	Management Information System
NBFI	Non-Bank Financial Institution
NBSSI	National Board of Small Scale Industries
NFI	Non-Fixed Income (Asset)
NGO	Non-Governmental Organization
REIT	Real Estate Investment Trust
SSB	Social Security Bank
SSNIT	Social Security and National Investment Trust
SSPS	Social Security Pension Scheme

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Executive Summary

Part A: Pension Fund and Investment Management

1. Introduction

1.1 This report covers the review of the Social Security and National Insurance Trust (SSNIT) and other elements of the pension system, as they relate particularly to Improved Financial Intermediation in the Ghanaian economy. Under the auspices of the Trade and Investment Reform Program, the Inter-Ministerial Committee on Competitiveness approved this project, managed by Sigma One Corporation, to review SSNIT and other elements of the pension system as part of the policy reform process that will lead Ghana to the "Vision 2020" goal of becoming a middle income country by the year 2020.

Scope of Work

1.2 This review was intended to develop and recommend a strategy to obtain a sustainable investment program to ensure funding of current and future obligations of the Pension Scheme. The study sought to achieve, inter alia, the following results:

- A review of the original and current objectives of SSNIT;
- A comparison of the market value of assets relative to current and future obligations of the Trust, using multiple scenarios;
- A review of the investment philosophy and current asset allocation;
- A recommendation for the allocation of assets to diversify risk and significantly enhance the overall return on the portfolio (taking into account social goals as part of the asset allocation process);
- Identification of practical steps to increase beneficiary participation (formal and informal sector) in the Pension Scheme;
- Recommendations regarding steps to be taken to create harmony between public interest goals of the Government and pension fund investments;
- Setting up of practical means of allocating funds to money managers;
- Suggestions of concrete actions and steps to be taken to increase private sector involvement in asset management; and
- Proposals regarding the introduction of new legislation (as appropriate) on tax deduction for private pension and self-employment plans.

1.3 The results were intended to facilitate the establishment of effective financial intermediation mechanisms that could foster increased private sector growth and attainment of the goals of Vision 2020.

Qualification

1.4 Unfortunately, the review team was not able to satisfactorily achieve many of the intended results of this review due to severe data limitations. Various departments within SSNIT have generously furnished the financial and operational data used in this report. However, inconsistent and inadequate data on contributor headcount, mortality and retirement rates, age distribution, income, market values and asset size of the Fund presented a less than clear picture of the Fund's financial and actuarial position. Since audit of the data was beyond the scope of this review, the review team has reflected the information provided as best as it felt could be justified.

1.5 In the context of a situation where the market value of assets is not clearly established and it seems that the Trust is accruing income from apparently non-performing assets as part of its revenues, there exists, of necessity, a good deal of uncertainty as to the actual performance and financial state of the social security system. The review team took these uncertainties into consideration in reaching its conclusions and recommendations for substantial changes to the mode of operation of SSNIT.

2. Performance of SSNIT

2.1 The Social Security Pension Scheme (SSPS) has, since 1991, experienced a substantial growth in assets, from ¢60 billion to ¢1,089 billion in 1997 and an estimated ¢1,175 billion in 1998. The Fund's investment performance, on the basis of the available data, has been poor. The return on investments for the cumulative eight-year period ending December 1998 resulted in a negative real return, of -12% p.a.

2.2 The review team found that the negative real returns and decrement in corpus registered by the Fund can be attributed principally to:

- Lack of adherence to investment policy and established performance benchmarks;
- An ad hoc asset allocation;
- Inadequate in-house investment capabilities and performance incentive programs;
- Inconsistent remittance of contributions due from Government and other Government influences; and
- High administrative cost.

2.3 As acknowledged earlier, there are problems and inconsistencies in the data underlying the review of performance. In some respects, the reported data may understate the returns SSNIT has achieved and the value of the Fund, since the assets are not "marked to market". In other respects, the performance may be overstated as income that may never be realised is accrued in the accounts, and non-performing assets may continue to be reflected at acquisition cost or capitalised value of accrued interest.

2.4 On the basis of the data reviewed, there is reason for concern over the performance and health of the social security pension system. The contributions the Fund is bringing in appear at present adequate to cover the pension obligations and administration expenses of the Fund coming due in the next few years. However, an analysis of the various performance management ratios indicates that substantial changes, which can undermine the soundness of the Scheme, are underway as the pensioner population grows relative to the contributor population. The recorded negative real rates of return are especially worrisome, as the Fund needs to generate revenues in excess of the nominal contributions paid in by members during their working-contributing lives if it is to be a sound, sustainable pension scheme.

2.5 The need to achieve positive real returns should take into account relevant risk factors that impact negatively on SSNIT's performance: risk factors related to inflow of funds; and risk factors related to investments. Regarding the former, the contributions coming from the Government tend to be subject to considerable delays, which causes considerable imbalance in the cashflow pattern for the Trust, and results in a fairly high level of ad hoc asset allocation throughout the year. Some small private sector companies default over long periods and are genuinely unable to meet both the principal payment, as well as the penalty.

2.6 With respect to risk factors related to investments, these are mainly concerned with critical appraisal and efficient follow-up of investments in an environment which requires close monitoring. In addition, there are issues related to investments that are initiated by Government. On the basis of the review in this report, SSNIT must, as a matter of urgency and ultimate survival, engage Government in a dialogue to establish the principles guiding its relationship with respect to timely payment of obligations due in order to ensure the Fund's viability and its ability to pay pensioners the real value of the pensions they worked and contributed for.

3. Asset Allocation

3.1 SSNIT currently is unable to adhere to its established asset allocation strategy of 67% invested in fixed income assets and 33% in non-fixed income assets. The existing allocation system appears to be ad hoc. Efforts to re-balance the portfolio to target have not been successful because the allocation decisions have been subservient to other external requirements; e.g., payments by Government in the form of unlisted securities. As a consequence, investment return from the current asset allocation is a significant departure from projected returns. A spreadsheet model has been developed by the review team to provide SSNIT with an approach that could assist in the gradual re-balancing of the asset allocation mix to achieve positive real rates of return which move closer to the investment policy recommendation.

3.2 Investment management is also a problem. There is no central investment committee to serve as the focal point of investment decision making. The absence of a centralized investment department has resulted in inconsistent operational, financial and investment data being generated and utilised in the decision making process by key departments within SSNIT. The review team feels there is a need for a specific investment management team to be in charge of overall monitoring of investments, particularly the performance of the private (unlisted) companies in which SSNIT has invested. This team should be responsible for generating data on investment performance and providing the needed experience for future investments.

3.3 Identification of an asset allocation should be in line with SSNIT's investment approach, investment guidelines and risk tolerance, which should be determined by the Trustees and Management. The review team recommends that SSNIT engage an investment advisor and establish an investment committee to help improve its investment decision making and portfolio management. Consideration should also be given to outsourcing substantial portions of the portfolio to qualified investment managers.

4. Conclusion and Recommendations

4.1 The review team thinks SSNIT's pension scheme is basically sound in its design and benefit payment structure. Given the relatively small, but growing, number of pensioners, the insured earnings rate was found to be adequate in meeting current benefit and administrative expenses of the Fund. However, the review team is concerned about the current operations of the Fund, in terms of the low or negative real returns generated on investments and the seemingly high administrative expenses relative to contributions and benefits paid. Unless significant improvements can be achieved on those two fronts in the near future, the review team feels the financial health of SSNIT could deteriorate rapidly, jeopardising the Fund's ability to meet its obligations.

4.2 The objectives of the SSNIT Scheme, while clearly articulated, are contradictory in theory and practice, with the effect of undermining the protection of corpus. This erosion of the real value of the Fund and its ability to meet obligations derives mainly through investment guidelines that encourage certain development-oriented activities which yield low real returns. These activities include, but are not limited to construction and rental of residential housing, as well as building schools, hospitals and industrial parks. The review team acknowledges and accepts the objective of the Fund to support investments that are in harmony with the public interest; but they believe that the public interest will not be served by investing SSNIT's funds into projects that yield low or negative returns to the nation.

4.3 The concerns regarding the investment portfolio, its returns and management, give rise to two sets of recommendations: 1) those dealing with an analytical review of the

investment portfolio; and 2) those recommending alternative management approaches for the portfolio.

4.4 The first set of recommendations include:

- Undertake a fair market valuation study of the corporate loan and unlisted equity asset classes, with a view to reflecting market appreciation or depreciation in the underlying classes;
- Develop and evaluate various exit strategies for assets received through debt/equity swaps from Government;
- Review the investment policy recommendations of allocating funds to attain an asset allocation mix of 67% FI and 33% NFI; and
- Commission, in conjunction with the next actuarial review, a comprehensive review of the Pension Scheme, its objectives, its performance, its actuarial soundness, its operations and procedures, its information requirements and systems, its relationship with Government and its future strategic plans.

4.5 Secondly, based upon, and in line with, the above analysis, the review team recommends that the following administrative actions be taken:

- Establish an investment committee with fiduciary obligation to the Board;
- Engage a qualified resident investment advisor to properly assess the investment portfolio, advise on acquisitions and disposals, identify suitable staff, their training needs and suitable training programmes for SSNIT to develop adequate in-house investment management capabilities;
- Revisit the investment approach, in light of the analyses above, and establish an investment philosophy which will guide the investment process in pursuing the organization's objectives;
- Engage Government in a dialogue to establish an appropriate relationship between Government and SSNIT with respect to timely payment of contributions and other obligations;
- Coordinate the investment activities under one department to ensure consistent data, dissemination of which is relied upon by management, as well as the actuarial and operational departments;
- Create a performance incentive system for various departments;
- Analyse the advantages and disadvantages of out-sourcing of certain investment activities (underwriting of corporate loans, acquisition and disposal of listed and unlisted equities) to professional investment managers; and
- Build an in-house investment skill set consistent with the portfolio management strategy adopted.

4.6 This review has concluded that there are serious problems facing SSNIT, which, if not confronted, threaten the soundness of the Pension Scheme. Implementation of the aforementioned recommendations, coupled with efforts improve pension administration,

should provide assurance that the Fund will be sustainable and able to honour its retirement obligations as they come due in the future.

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Part A: Pension Fund and Investment Management

Chapter I: Introduction

1. Challenges and Objectives of the Review

1.1 In a quest to become a middle income country by the year 2020, the Government of Ghana has embarked on a Vision 2020 strategy. Underlying this strategy is the initiation of steps to generate a rate of growth that will lead to the attainment of its goal. With the approval of the Inter-Ministerial Committee on Competitiveness, which oversees the Trade and Investment Reform Program, Sigma One Corporation commissioned this project to review SSNIT and other elements of the pension system, particularly as they relate to improved financial intermediation in the Ghanaian economy.

1.2 This review was intended to develop and recommend a strategy to obtain a sustainable investment program to ensure funding of current and future obligations of the Pension Scheme. The study sought to achieve, *inter alia*, the following results:

- A review of the original and current objectives of SSNIT;
- A comparison of the market value of assets relative to current and future obligations of the Trust, using multiple scenarios;
- A review of the investment philosophy and current asset allocation;
- A recommendation for the allocation of assets to diversify risk and significantly enhance the overall return on the portfolio (taking into account social goals as part of the asset allocation process);
- Identification of practical steps to increase beneficiary participation (formal and informal sector) in the Pension Scheme;
- Recommendations regarding steps to be taken to create harmony between public interest goals of the Government and investments;
- Setting up of practical means of allocating funds to money managers;

- Suggestions of concrete actions and steps to be taken to increase private sector involvement in asset management; and

- Proposals regarding the introduction of new legislation (as appropriate) on tax deduction for private pension and self-employment plans.

1.3 The results were intended to facilitate the establishment of effective financial intermediation mechanisms that could foster increased private sector growth and attainment of the goals of Vision 2020.

Qualification

1.4 Unfortunately, the review team was not able to satisfactorily achieve many of the intended results of this review due to severe data limitations. Various departments within SSNIT have generously furnished the financial and operational data used in this report. However, inconsistent and inadequate data on contributor headcount, mortality and retirement rates, age distribution, income, market values and asset size of the Fund presented a less than clear picture of the Fund's financial and actuarial position. Since audit of the data was beyond the scope of this review, the review team have reflected the information provided as best as they felt could be justified.

1.5 In the context of a situation where the market value of assets is not clearly established and it seems that the Trust is accruing income from apparently non-performing assets as part of its revenues, there exists, of necessity, a good deal of uncertainty as to the actual performance and financial state of the social security system. The review team reached its conclusions and recommendations on the basis of what it considers very inadequate and deficient data regarding the operations and finances of SSNIT; and thus, the conclusions and recommendations must be judged in that light. Nevertheless, without the benefit of adequate objective and empirical information, the review team has made recommendations for substantial changes to the mode of operation of SSNIT, which it believes are relevant and appropriate under the circumstances.

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Part A: Pension Fund and Investment Management

Chapter II: Social Security Pension Scheme (SSPS)

1. History of the Social Security Pension Scheme

1.1 The Social Security Pension Scheme was established in 1991 under the Social Security Law PNDCL 247, under the trusteeship of the Social Security and National Insurance Trust. The predecessor of the SSPS was the Provident Fund, established under the Social Security Act of 1965 (Act 279) and later the Social Security Decree of 1972 (NRCD 127), as a Provident Fund. The Fund ran for twenty-five years until it was converted to a Social Security Pension Scheme on July 1st, 1991.

1.2 All contributions made to the Provident Fund from 1965 to 1991 were given credits to join the newly established Pension Scheme. Exemptions were granted to the military, the police, the judiciary, universities and certain research institutions to remain under the Pension Ordinance (CAP 30) established in 1946 for officers in the Public Service of the Gold Coast.

2. Provident Fund

2.1 The Provident Fund system operated as a compulsory savings scheme with criteria for withdrawals based on partial withdrawals at ages forty-five and fifty for females and males, respectively, with final payments made after the ages of fifty for females and fifty-five for men.

2.2 Payments were in the form of a lump sum with interest computed at fifty percent of the prevailing rate earned on special Government stocks issued by the Government.

3. Pension Scheme

3.1 The conversion of the Provident Fund to a Pension Scheme was finally realised in 1991, twenty years after its conception. The major reason for the delay in conversion was the inadequacy of the lump sum payments, as a result of the high rate of inflation prevailing at the time.

3.2 Currently, benefits paid under the Scheme are:

- Old age pensions
- Invalidity pensions
- Death and survivors lump sum payments.

3.3 An old age pension is payable in full to a worker who: (1) retires, (2) has attained the pensionable age of sixty, and (3) has paid at least 240 months of contributions. The benefit levels are:

- 50 percent of the average of the best three years of insured earnings for a contribution period of 240 months;
- Plus one and one-half percent for every 12 months of contributions paid in excess of the first 240 months; and
- Pensions are capped at eighty percent of the average of the best three years of insured earnings, with current minimum monthly pension of ¢8,500.

3.4 Workers may retire as early as age fifty-five, but the amount of their pension is reduced according to their age of retirement. Workers may opt at the time of retirement to receive 25 percent of the amount of their old age pension in the form of a lump sum payment.

4. Objectives of Social Security Pension Scheme

4.1 The two main original and current objectives of the Pension Scheme are:

a. To maintain a long-term optimum fund ratio:
   - i Through realisation of positive returns on investment;
   - ii By maintaining a portfolio mix which ensures low risk on investment;
   - iii By ensuring adequate liquidity to enable the Trust meet its obligations when due.

b. To undertake investments, which are development-oriented through:
   - i Provision of visible benefits (e.g., Housing, Transportation);
   - ii Contribution to Economic Development (e.g., Export Processing Zone);
   - iii Galvanisation of investment in the informal sector (Construction of Industrial Estates and Markets);
   - iv Making of initial social-oriented investments with reasonable expected returns (e.g., Hospitals and Recreational Facilities); and

v Undertaking of investments in the Agricultural Sector to encourage the development of the sector.

4.2 The objectives of the Social Security Pension Scheme, although well and good, create a conflict of interest between the objective of maintaining a long term optimum Fund Ratio and undertaking development-oriented investments. The review team feels that SSNIT should engage Government in a dialogue to clearly examine SSNIT's role in the economy and identify a strategy that supports the country's social development objectives without jeopardising the soundness of the social security system.

Box II.1: What Criteria Should SSNIT Use in Making Development-Oriented Investments?

SSNIT has, as part of its mandate, the primary objectives "to maintain a long term optimum Fund Ratio", and to "provide investments which are development-oriented." How should SSNIT pursue those objectives while ensuring that, in investing social security funds, the major requirements of achieving high yields, assuring safety, having liquidity, maintaining asset value, remaining in harmony with public interest and being diversified are adhered to?

In investing social security funds in development-oriented projects, SSNIT can either choose losers or winners. Losers are projects whose costs to society over the investment horizon exceed their benefits. Such projects have negative real rates of return, and as such make the investor worse off. For the nation, investing in losers will reduce the long term development potential of the economy, and reduce the real resources available for development in the future. Such projects also tend to invite abuse, as rent-seekers and corrupt individuals attempt to take advantage of institutions or investors willing to make unsound investments. There is little justification for SSNIT to invest social security funds in losers.

In contrast, winners are investments that can pass the relevant economic and financial project evaluation tests of generating benefits that exceed their costs over their investment horizon. They will raise the real output of the economy and the standard of living of the nation, and provide greater levels of future resources to promote further development.

There are two broad classes of winning investment projects: those that are financially and economically viable; and those that are economically viable, but not financially viable. For the former, there is no problem to SSNIT if it invests in such projects. The social security funds invested yield positive real returns and there are more resources available at the end of the day to fund social security obligations.

For the latter class, while the economic benefits to Ghana from investing in the project may exceed the economic costs, the financial rate of return, after adjusting for inflation, could be negative. This can arise in situations where the private benefits and costs associated with the project may diverge from the social benefits and costs, due to distortions, externalities and other market failures.

If SSNIT invests in such projects, it runs the risk of eroding its soundness, violating one or more of the six major requirements of investing social security funds. It also could invite other risks associated with unproductive rent-seeking and corrupt behaviours.

But, with the economic benefits of such projects exceeding their costs, a case can be made for Government intervention to provide the appropriate incentives to have that project undertaken. In such a circumstance, the Government could provide a subsidy to SSNIT finance the difference between the financial rate of return SSNIT might expect to earn on the project and the opportunity cost of capital to SSNIT of the funds invested (i.e., how much SSNIT might have earned if the funds were invested in the next best opportunity). That approach would best ensure that SSNIT's investment decisions were consistent with its objectives.

Having SSNIT invest in socially desirable, development-oriented projects that are not financially viable would amount to imposing a tax on the current and prospective beneficiaries of the social insurance scheme to pay for such projects. Such a tax is difficult to justify: indeed, any tax needed to finance development-oriented investment should be explicit.

In order to adhere to its mandate and objectives, the Board of SSNIT needs to separate its social insurance objectives and roles from its development-oriented objectives and roles. Pursuit of the latter should never be allowed to jeopardise the former. That can be achieved by rigorously evaluating all project proposals; and those deserving ones, which are not financially viable, should be the subject of negotiations with Government in order to provide explicit subsidies to enable SSNIT to undertake such projects on behalf of the nation without jeopardising the Fund's soundness.

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Part A: Pension Fund and Investment Management

Chapter III. Pension Fund Strategy and Performance

1. Investment Strategy

1.1 SSNIT over the years has assumed a position of dominance as one of the major sources of medium and long-term funds in the financial sector of Ghana. The conversion from lump sum payments to pension payments resulted in the accumulation of funds. As part of the conversion process, the Government agreed to allow the funds to be invested not only in Government stocks, but also in other "safe" areas. This led to the development of a very basic investment policy, summarised as follows:

- Parts of the annual contributions received are to be used to effect payment of benefits and administrative cost.
- Sixty-seven (67) percent of surplus is to be invested in fixed income securities.
- The residual thirty-three (33) percent is to be invested in non-fixed income instruments.

2. Performance Review

2.1 Since 1989, as shown in Table I.1 below, SSNIT has experienced a substantial growth in assets, from ¢41 billion to ¢1,089 billion at the end of calendar year 1997, and an estimated level of ¢1,175 billion at the end of 1998, an increase of over 45 percent p.a. The contributor population has grown more modestly from almost 559,000 in 1989 to over 700,000 in 1997; although the review team estimates 550,000 regular contributors in 1997. The number of pensioners has also grown rapidly since 1991, from less than 1000 to almost 32,000 in 1998; the average annual rate of growth of pensioners over the period was over 64 percent. Annual contributions to the Fund increased from ¢13.3 billion in 1989 to ¢228 billion in 1998, an increase of over 37 percent p.a. Payments of pension benefits have increased from ¢0.72 billion in 1991 to an estimated ¢45 billion in 1998, an increase of 40 percent p.a.

Table III.1: SSNIT Contributors, Pensioners, Contributions and Pensions

Year	Contributors		Pensioners		Contributions		Pensions	
	Number (Thousand)	Rate of Growth %	Number (Thousand)	Rate of Growth %	Amount ¢ billion	Rate of Growth %	Amount ¢ billion	Rate of Growth %
1989	558.9		0		13.3		0	
1990	538.1	-3.72	0		17.7	33.2	0	
1991	555.0	3.14	0.97		20.6	16.5	0.72	
1992	572.8	3.21	3.55	265.7	32.3	57.0	1.57	118.1
1993	586.1	2.32	6.72	89.2	86.0	166.1	3.33	112.1
1994	611.2	4.28	10.77	60.3	83.4	-3.1	8.14	144.4
1995	643.3	5.25	16.25	50.8	115.6	38.7	13.41	64.7
1996	660.7	2.70	21.79	34.2	170.1	47.1	20.80	55.1
1997	701.7	6.21	26.67	22.4	202.6	19.1	32.10	54.3
1998*	725.6	3.41	31.75	19.0	228.0	12.5	45.03	40.2
Average Rate of Growth %		2.94		64.57 since 1991		37.2		80.5 since 1991

Source: SSNIT Report on the 1998 Actuarial Valuation; SSNIT 1998 and 1999 Budgets; SSNIT Report on the Third Actuarial Review of the Pension Scheme 1996.
Note: a Actuarial Report Estimate.
Contributors: Refers to the number of active participants in any one calendar year. "Active participant" is defined as an individual having made at least one monthly contribution during the year.
Pensioners: These are a combination of claimants receiving old age, invalidity and survivor benefits.
Market Value: The sum of investment assets at calendar year end. Listed equities and short term fixed income instruments are reflected at market value, with the residual asset classes reflected at cost. The substantial investments in real estate have not been subjected to any revaluation.
Return on Investment: Computed as total reported return divided by total value of the Fund at the end of each year and reflects nominal returns.

2.2 The income and expenditure of the Trust has also experienced rapid growth in nominal terms since 1991, with total income, comprising contributions, investment returns and other income, registering growth of 40.8 percent p.a., while payments for pensions and administration expenses have grown 54.2 percent p.a. (See Table I.2) The data for 1998, from the 1999 SSNIT Budget (which differ from the estimates provided in the 1998 Actuarial Review), reflect a sharp drop in investment returns and other income, as well as notable deceleration in the rates of growth of pensions and administration expenses.

Table III.2: SSNIT Income, Pensions and Administrative Expenditures

	Income (¢ Billion)					Expenditure (¢ Billion)			
Year	Contri-butions	Investment	Other	Total	Rate of Growth %	Pensions	Adminis-tration	Total	Rate of Growth %
1989	13.30			13.30					
1990	17.70			17.70	33.08				
1991	20.58	6.44	0.23	27.25	53.95	0.72	3.58	4.30	
1992	32.32	10.47	0.18	42.97	57.69	1.57	6.72	8.29	92.79
1993	86.00	17.56	1.17	104.73	143.73	3.33	9.58	12.91	55.73
1994	83.35	27.10	0.25	110.70	5.70	8.14	17.76	25.90	100.62
1995	115.65	37.32	1.28	154.25	39.34	13.41	20.30	33.71	30.15
1996	170.06	75.72	3.85	249.63	61.83	20.80	30.45	51.25	52.03
1997	199.84	112.32	9.81	321.97	28.98	32.10	45.00	77.10	50.44
1998(est)	221.08	66.75	0.86	288.69	-10.34	40.10	48.93	89.03	15.47
Average Rate of Growth %	36.66	39.66 since 1991	20.73 since 1991	40.77		77.58 since 1991	45.29	54.17	

Source: SSNIT Report on the 1998 Actuarial Valuation; SSNIT 1998 and 1999 Budgets; SSNIT Report on the Third Actuarial Review of the Pension Scheme 1996.

2.3 In current price terms, the level of contributions per contributor and the value of the Fund per contributor have grown steadily since 1989, as shown in Table I.3. Contributions per contributor have grown an average of 33 percent p.a. over the period, from ¢23,730 in 1989 to ¢314,220 in 1998. The value of the Fund per contributor has grown from ¢73,180 in 1989 to over ¢1.619 million in 1998, an increase of 41 percent p.a.

2.4 While the Fund has grown rapidly in nominal, current prices since 1989, in constant 1998 prices (adjusting for inflation), the growth has been more modest. As shown in Table I.3, the value of the Fund in 1998 prices has grown from ¢393 billion in 1989, to ¢1175 billion in 1998, an increase of only 12.9 percent p.a. It is notable that most of the growth of the Fund in real, constant 1998 prices occurred over the period 1989 to 1994, when in real terms the Fund was valued at ¢1024 billion. Since then, the value of the Fund in 1998 prices has fluctuated up and down, with decreases in the real value of the Fund being recorded in 1996 and 1998.

2.5 In constant 1998 price terms, the growth in the value of the Fund per contributor and the level of contributions per contributor has been much more modest over the period from 1989 to 1998: the former registering a 6.66 percent p.a. average rate of growth, while the latter grew only 4.02 percent p.a. Indeed, the real, 1998 purchasing power of

contributions and contributions per contributor has been declining steadily since 1993, while the real value of the Fund per contributor has been fluctuating around ¢1.6 million since 1993. The value of the Fund per contributor in 1998, at ¢1.619 million was only 4.5 percent greater than that for 1993, measured in 1998 constant prices.

Table III.3: SSNIT Contributions per Contributor, Value of Fund in Current and Constant 1998 Prices

Year	Contributions/Contributors		Value of Fund		Value of Fund in Constant 1998 Prices		Contributions in Constant 1998 Prices	
	¢ Thousand	Rate of Growth %	¢ Billion	¢ '000 per Contributor	¢ Billion	¢ '000 per Contributor	¢ Billion	¢ '000 per Contributor
1989	23.73		40.90	73.18	393.40	703.84	127.60	228.30
1990	32.82	38.32	60.83	112.43	424.40	788.67	123.90	230.20
1991	37.08	12.98	83.78	150.99	497.90	897.15	122.30	220.40
1992	56.42	52.15	118.46	206.88	639.40	1116.35	174.40	304.50
1993	146.73	160.08	210.27	358.81	908.00	1549.27	371.40	633.60
1994	136.37	-7.06	296.41	484.95	1024.80	1676.75	288.20	471.50
1995	179.77	31.82	509.04	791.23	1103.40	1715.29	250.70	389.70
1996	257.40	43.18	726.16	1099.14	1073.70	1625.15	251.50	380.60
1997	288.73	12.17	1089.70	1552.94	1260.80	1796.76	234.40	334.10
1998(est)	314.22	8.83	1175.00	1619.35	1175.00	1619.35	228.00	314.20
Average Rate of Growth %	33.25		45.22	41.07	12.93	9.58	6.66	4.02

Source: SSNIT Report on the 1998 Actuarial Valuation; SSNIT 1998 and 1999 Budgets; SSNIT Report on the Third Actuarial Review of the Pension Scheme 1996.

2.6 As shown in Table I.4, the value of the Fund per pensioner has declined in both current and constant 1998 price terms since 1991; although in current price terms, the decrease basically all occurred in 1992. However, in constant 1998 prices, there has been a steady decline in the real value of the Fund per pensioner, reflecting the more modest growth in the real value of the Fund over the period compared to the growth in the pensioner population.

2.7 The investment performance of the Trust's portfolio has been less than stellar over the period for which data are available, from 1991 to 1998. Table I.4 shows the investment income and nominal rate of return calculated by dividing the investment income in year t by the level of the Fund at the end of year t-1. While nominal rates of return averaging 12.45 percent were achieved over the eight year period, with the rate of inflation

averaging 27.57 percent p.a., negative real returns, -11.85 percent p.a., were estimated for the period 1991 to 1998. Only in 1992 did the nominal rate of return earned on the Trust's investments exceed the rate of inflation. The worst real return was recorded in 1995, -29.41 percent, when the nominal rate of return was 12.59 percent and the rate of inflation was 59.5 percent.

Table III.4: SSNIT Fund Value, Fund Value per Pensioners and Investment Returns

Year	Value of Fund		Value of Fund per Pensioner		Investment Income			
	¢ Billion	in 1998 Prices	¢ Million	¢ Million in 1998 Prices	¢ Billion	Rate of Return [a]	Rate of Inflation	Real Rate of Return
1989	40.90	393.40						
1990	60.83	424.40						
1991	83.78	497.90	86.40	512.8	6.44	10.59%	18.00%	-6.28%
1992	118.46	639.40	33.37	180.1	10.47	12.50%	10.10%	2.18%
1993	210.27	908.00	31.29	135.1	17.56	14.82%	25.00%	-8.14%
1994	296.41	1024.80	27.52	95.1	27.10	12.89%	24.90%	-9.62%
1995	509.04	1103.40	31.33	67.9	37.32	12.59%	59.50%	-29.41%
1996	726.16	1073.70	33.33	49.3	75.72	14.88%	46.60%	-21.64%
1997	1089.70	1260.80	40.86	47.3	112.32	15.47%	27.80%	-9.65%
1998[b]	1175.00	1175.00	37.00	37.0	66.75	6.13%	15.70%	-8.28%
Average Rate of Growth %	45.23	12.93	-11.41	-31.31		12.45%	27.57%	-11.85%

Source: SSNIT Report on the 1998 Actuarial Valuation; SSNIT 1998 and 1999 Budgets; SSNIT Report on the Third Actuarial Review of the Pension Scheme 1996.
Note: (a) Calculated as investment income relative to previous end of year value of the Fund. (b) Investment income from SSNIT 1999 Budget.

2.8 Table I.5 summarises what has happened over the period from 1991 to 1998 to several of the basic ratios monitored for the Fund, viz.: the ratio of administration expenses to contributions, the ratio of administration expenses to the value of the Fund, the Fund Ratio and the Dependency Ratio. The ratio of administration expenses to total contributions has been hovering around 0.20, with the exception of 1993, when it fell to 0.11. In a similar manner, the administration expenses relative to the value of the Fund has been fluctuating around 5 percent, averaging 0.0462 over the period. The Fund Ratio, the ratio of total outflow to the value of the Fund has declined from 19.5 in 1991 to 13.2 in 1998 (using the 1999 Budget data for estimated benefits and expenses); and is above the 8.0 level that is felt to be optimum. Finally, the dependency ratio, the number of pensioners relative to the number of contributors, has been rising steadily from 0.0017 in 1991 to 0.0438 in 1998.

Table III.5: SSNIT Administration Cost Relative to Contributions and Value of Fund, and Dependency Ratio

Year	Value of Fund ¢ Bn	Contri-butions ¢ Bn	Adminis-tration Expenses ¢ Bn	Admin. Costs/ Contri-butions	Admin. Costs/ Fund	Total Benefits and Expenses	Fund Ratio	Contri-butors '000	Pensioners '000	Depen-dency Ratio
1989	40.90	13.30						558.9	0	
1990	60.83	17.70						538.1	0	
1991	83.78	20.58	3.58	0.1740	0.0427	4.30	19.5	555.0	0.97	0.0017
1992	118.46	32.32	6.72	0.2079	0.0567	8.29	14.3	572.8	3.55	0.0062
1993	210.27	86.00	9.58	0.1114	0.0456	12.91	16.3	586.1	6.72	0.0115
1994	296.41	83.35	17.76	0.2131	0.0599	25.90	11.4	611.2	10.77	0.0176
1995	509.04	115.65	20.30	0.1755	0.0399	33.71	15.1	643.3	16.25	0.0253
1996	726.16	170.06	30.45	0.1791	0.0419	51.25	14.2	660.7	21.79	0.0330
1997	1089.70	199.84	45.00	0.2252	0.0413	77.10	14.1	701.7	26.67	0.0380
1998E	1175.00	221.08	48.93	0.2213	0.0416	89.03	13.2	725.6	31.75	0.0438

Source: SSNIT Report on the 1998 Actuarial Valuation; SSNIT 1998 and 1999 Budgets; SSNIT Report on the Third Actuarial Review of the Pension Scheme 1996.

2.9 As acknowledged earlier, there are problems and inconsistencies in the data underlying the review of performance. In some respects, the reported data may understate the returns SSNIT has achieved and the value of the Fund, since the assets are not "marked to market". In other respects, the performance may be overstated as income that may never be realised is accrued in the accounts, and non-performing assets may continue to be reflected at acquisition cost or capitalised value of accrued interest.

2.10 On the basis of the data reviewed, there is reason for concern over the performance and health of the social security pension system. While the contributions the Fund is bringing in appear at present adequate to cover the pension obligations coming due and the administration expenses of the Scheme, the various ratios are reflecting that substantial changes are underway as the pensioner population grows. The recorded negative real rates of return are especially problematic, as the Scheme needs to generate revenues in excess of the nominal contributions paid in by members during their working-contributing lives if it is to be a sound, sustainable pension scheme.

2.11 The review team found that the negative real returns and decrement in corpus registered by the Fund can be attributed principally to:

- Lack of adherence to investment policy;
- Ad hoc asset allocation;
- Inadequate in-house investment skill set;
- Inconsistent remittance of contributions due from Government; and
- High administrative cost.

2.12 Part of the problem faced by the Fund can be traced to the conversion of the Scheme from a Provident Fund to a Pension Fund, which resulted in the rapid accumulation of funds that the Trust attempted to invest in ways that could meet the stated objectives of the Scheme. Administrators and Trustees of the Scheme established certain assumptions and designed a financial model to assist in determining the appropriate asset mix that would yield a real rate of return of 2 percent that they felt was needed to satisfy actuarial projections.

2.13 Despite the presence of an investment model for determining the allocation of assets for investment, SSNIT could not adhere to the asset allocation prescribed. The adopted asset allocation strategy of investing 67 percent of the funds in fixed income assets (short, medium and long term securities and corporate obligations), and 33 percent in non-fixed income assets (listed and unlisted securities, real estate and social investments) was not adhered to. The review team observed that no clear benchmarks and rebalancing targets were established. The lack of an investment committee and skilled in-house investment personnel, as well as the transfer of assets to SSNIT by the Government in lieu of payment, would seem to have aggravated the situation.

2.14 A review of annual contributions to the Fund reflects significant inconsistency by the Government in remitting its obligation to the Scheme. As of December 1998, the Government had cumulative arrears of ¢85 billion. The Scheme fails to accrue contribution due in appropriate periods, in addition to not accruing and billing the Government the established punitive penalty of 3 percent per month on delayed payments. Unanticipated, inconsistent, delayed and in kind payments of contributions by the Government gives rise to a number of problems for the Fund, including:

- Difficulties in managing cash flow and working capital;
- Problems with meeting short term obligations (payments of benefits and administrative expenses);
- Reduced investment earnings (opportunity cost of foregone investment);

- Delayed crediting of Government employees; and
- Departures from the target asset allocation

2.15 Other issues relating to the performance of SSNIT include:

- Inconsistent data and lack of audited financial statements for year end 1997; and
- Interest on SSNIT's loan portfolio appears to be capitalised annually, while documentation regarding loan repayments and potential write-offs is unavailable to determine the true loan performance and value. For example, according to data from the SSNIT's 1998 and 1999 budgets, loans outstanding are expected to decline from ¢258 billion in 1997 to ¢187 billion and to ¢162 billion in 1998 and 1999, respectively. The review team was unable to obtain suitable financial data to account for these changes.

2.16 In light of the above, SSNIT needs to engage Government in a dialogue to review and establish the principles guiding its relationship, both with respect to timely payment of obligations due and in terms of the Board's independence in making the investment decisions needed in order to ensure the Trust's viability and its ability to pay pensioners the real value of the pensions they have worked and contributed towards.

3. Risk Factors

3.1 The need to achieve positive real returns should not be viewed in isolation from the environment within which SSNIT operates. SSNIT needs to take into account relevant risk factors that impact negatively on its performance, and thereby the achievement of the set targets.

3.2 These risk factors come in various forms and include:

- Risk factors related to inflow of funds.
- Risk factors related to investments.

4. Risk Factors Related to Inflow of Funds

4.1 Provision is being made by SSNIT for the expected inflow of contributions from the informal sector. However, not enough public education and infrastructure development has taken place to enable such inflows to be realised. A major issue, therefore, is the need to design a scheme that will achieve the acceptance of the informal sector. Any projections at this stage could lead to high expectations, in view of the fact that the

informal sector contains a very much larger population than the formal sector and specific pension contribution options have not been vetted with potential acceptors.

4.2 The contributions coming from the Government tend to be subject to considerable delays. This is a substantial part of total inflows. Delayed receipt causes considerable imbalance in the cashflow pattern for the SSNIT, and results in a fairly high level of ad hoc asset allocation throughout the year. The delays in payment of contributions from Government also result in loss of income, as well as loss of penalty of 3 percent per month, which is levied on such delayed payments by other employers.

4.3 Some small private sector companies default over long periods and are genuinely unable to meet both the principal payment, as well as the penalty. These very often fold up or become completely "invisible". It may be prudent to relegate such companies to the system being proposed for the informal sector.

5. Risk Factors Related to Investments

5.1 The major factors deal with critical appraisal and efficient follow-up of investments in an environment which requires close monitoring. In addition to these factors, there are issues related to investments that are initiated by Government. The assistance of SSNIT is normally sought by way of both equity and loans. Such requests are usually in line with national development programs and need to be accommodated. In view of this, it is being proposed that a certain level of funds be set aside and placed in fixed deposits for such purposes. These deposits might be termed a "firewall provision". A system of this nature would ensure that the realignment of investments once achieved could be maintained. This is particularly important in view of the projected growth of the Fund. There is a high risk that attention will be diverted from the main function of SSNIT to investment activities. As such, the operations of SSNIT need to be focussed on the benefits aspect of the business.

Box III.1: SSNIT and the Role of Government

This report has identified a number of areas where SSNIT, through its relationship with the Government, has been disadvantaged and disrupted from achieving its primary objectives.

Examples where Government has delayed paying its share of contributions due on behalf of the workers it employs, even while it has not delayed paying the workers, disadvantages both SSNIT and those workers.

The examples where Government has paid monies owed in the form of unlisted equities and bonds, which SSNIT would not have chosen to have in its portfolio, are other cases of where the role of Government has not been appropriate with respect to the social insurance system. That is different from cases in which SSNIT sought payment from Government in the form of assets, which it thought it would get "on-the-cheap", but that turned out to be poor or non-performing assets. In those cases, it was SSNIT's investment decision making processes that were at fault, not Government's intervention.

The use of SSNIT to fund student loans, which are guaranteed by the student's guarantor, and the Government has promised to pay the interest subsidy on the loan, is a further example where the primary objectives of SSNIT, to be a social insurance scheme that can fund old age retirement pensions of workers who have contributed to the scheme, has been put in jeopardy.

This review has indicated, with some uncertainty due to data limitations, that the real value of SSNIT's accumulated fund has been stagnant in recent years, at times even eroded, which means that despite the growing numbers of contributors and the high levels of contributions there has been no growth in the ability of SSNIT to fund existing pensioners, as well as the growing obligations of the increasing numbers of members who are contributing to the scheme.

The possibility that SSNIT could become financially distressed in the next 5-10 years can be related, in part, to the practices of Government that have contributed to SSNIT's negative performance over the past 4-5 years.

It would seem on the basis of the review in this report, SSNIT must, as a matter of urgency and ultimate survival, engage Government in a dialogue to establish the principles guiding its relationship with respect to timely payment of obligations due in order to ensure the Fund's viability and its ability to pay pensioners the real value of the pensions they worked so hard, and contributed so much, for.

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Part A: Pension Fund and Investment Management

Chapter IV. Asset Allocation

1. Basic Objectives for Asset Allocation

1.1 Pursuant to the SSNIT 1996 annual report and accounts, "The Trust is the only institution legally authorised to operate a social insurance pension scheme in Ghana and, consequently, has the responsibility, amongst others, for investing the Scheme's resources in order to fulfil its obligations to current and prospective pensioners". The report further states, "this entails diversified investment of the Scheme's resources into viable areas of the Ghanaian economy, in particular the financial, manufacturing and service sectors, and residential and commercial properties."

2. Policy for Asset Allocation

2.1 The original and existing investment strategy regarding asset allocation, with targets of 67% of the portfolio invested in Fixed Income Assets and 33% in Non-Fixed Income Assets, is described in more detail in the Appendix for Chapter IV.

Table IV.1: Asset Allocation: Actual versus Target

	Average for 1994-1997		Calendar Year 1997[b]
Asset Class	Actual[a]	Target	
Fixed Income			
Short Term	12.28%	16.60%	5.58%
Long Term	37.00%	50.07%	40.47%
Total Fixed Income	49.28%	66.67%	46.05%
Non-Fixed Income			
Equity (Listed and Unlisted)	16.03%	9.50%	17.06%
Real Estate	18.67%	12.99%	16.78%
On-Going Projects	16.02%	10.84%	20.11%
Total Non-Fixed Income	50.72%	33.33%	53.95%

Grand Total	100.00%	100.00%	100.00%

Notes:
a SSNIT Investment Policy Review paper.
b From SSNIT Investment Development Department - 1997 Market Value of Assets.

2.2 SSNIT currently is unable to adhere to its established asset allocation strategy. The existing practice is at best ad hoc. Efforts to rebalance to target have been subservient to other external requirements; e.g., payments by Government in the form of unlisted securities. Therefore, investment return from the current asset allocation is a significant departure from projected return. Moreover, there is no central investment committee to serve as the focal point of investment decision making.

2.3 Different departments within SSNIT are responsible for implementing the investment vehicles for each asset strategy. The Project and Estate Departments implement the real estate strategy. The Accounting Department handles treasury management and corporate loans. The Investment Department is responsible for listed equities and certain unlisted equities. There is need for a specific investment management team to be in charge of overall monitoring of investments, particularly the performance of the private (unlisted) companies in which SSNIT has invested. This team should be responsible for generating data on investment performance and providing the needed experience for future investments.

2.4 The absence of a centralised investment department has resulted in inconsistent operational, financial and investment data being generated and utilised in the decision making process by key departments (actuarial, projects, investments and management) within SSNIT.

2.5 The continued debt/equity swaps engaged in by Government and SSNIT, in partial fulfilment of Government's contribution obligation, skewed projected allocation of investable funds to unintended asset classes. The total performance of the Fund is also undermined where market appreciation or values of unlisted companies are unknown at the time of receipt into the portfolio. This presents a challenge to the Scheme as they may have no exit strategy for realising the intrinsic values of portfolio companies received.

2.6 As part of its FI class, SSNIT holds a corporate loan portfolio ¢161.9 billion (according to the SSNIT 1999 Budget). Yet SSNIT has no clear underwriting criteria, corporate loan division, loan officers, credit committee or loan recovery unit. The portfolio is non-performing as interest is continually being capitalised annually. No principal payment has been reflected, either as available investable funds or a write-off of corpus and a loss of income.

2.7 There is no acquisition strategy for many of the portfolio companies held in the NFI unlisted equity asset class. Exit strategies for portfolio companies are unstated and SSNIT does not possess the in-house venture capital skill set to enable the Trust to oversee these companies. SSNIT does have both debt and equity participation in the portfolio companies, consequently creating a high degree of covariance amongst the asset classes. The non-performance of the portfolio companies, therefore, affects both FI and NFI classes.

Box IV.1: SSNIT and Student Loans

The student loan program introduced by SSNIT provides for Government to pay the difference between the 6% interest which the loans attract from the students and the 12 month treasury bill rate. The Government also provides insurance cover for the loans in the event of death of the student. The loans are guaranteed by a member of the Pension Fund who has contributed enough to the fund to provide a real, effective guarantee. SSNIT introduced the student loan program in part to win support from existing members and attract new members into the Pension Scheme pipeline in order to help to keep the Fund Ratio high. Investing in human capital can readily be justified as being in harmony with SSNIT's public interest objective of supporting development-oriented investments. Imperfect capital markets, especially with respect to investments in education and training, provide a justification for government intervention.

On the surface, such loans would appear to be a reasonably safe and attractive investment for the social insurance pension fund. There is a subsidy attached to the student loans, which is mainly paid for by Government. There is another kind of subsidy in terms of the duration of the student loan, which is more than that of a 12 month treasury bill; and longer duration loans usually attract higher interest rates because of the greater risks involved - market risk, credit risk, etc. But that would not seem to be very great in the current circumstances. Whether there should be a subsidy on post-secondary education and training, and how it should be funded, is a separate issue.

Allowing existing members of SSNIT to guarantee student loans runs the risk of eroding the social insurance purpose for which SSNIT was established. It amounts, in essence, to allowing SSNIT's members to borrow against their future pensions and consume those funds now, even if that consumption is in the form of investing in their children's education and not having a pension when one retires.

There are several reasons why one should be concerned about such a scheme. The students being provided the subsidised, guaranteed loans may not be successful in their studies - it happens. Even if successful, they might not secure formal sector jobs, or even informal sector jobs, providing adequate incomes to enable them to repay the loans, and get the SSNIT members' guarantees cleared. Or they just might not want to repay the loans, and let the burden of that fall on the guarantors.

There are possibilities of adverse selection and moral hazard that can creep into such student loans. The potential guarantors may know, because they are ill, that they may never get to enjoy much of a pension, and may not have eligible survivors who might enjoy survivor's benefits if they were to die. Guaranteeing student loans could then be a way to capitalise on the information they have, and alter the parameters which affect SSNIT's expected outflow of funds.

But, just the idea that the social insurance scheme may not now be able to fulfill its intended purpose of providing pensions to retirees, because they have already borrowed against and used those funds, should be enough of a reason to revisit the student loans scheme being run by SSNIT.

3. Review and Model Improvement

3.1 The existing asset allocation model aims at achieving a target asset mix. SSNIT's investment policy dated December 1994, recommended a gradual build up of the asset allocation mix that stabilizes at a proportion of 67% and 33% for Fixed Income (FI) and Non-Fixed Income (NFI) assets, respectively. It is important to note that prior to 1995, SSNIT only had a FI portfolio, which consisted mainly of Government securities (81.5% Government stocks and 18.5% treasury bills). The investment policy, however, was not strictly adhered to due to a number of reasons as noted throughout the report (e.g., Government's transfer of assets to SSNIT as payment for contributions due). Proportions of end of year (EOY) asset mix for 1997, and those estimated 1998 and 1999, are reflected below.

Table IV.2: SSNIT Investment Policy Asset Allocation

	1997		1998		1999	
	Proportion of Investable Funds	End of Year Asset Mix	Proportion of Investable Funds	End of Year Asset Mix	Proportion of Investable Funds	End of Year Asset Mix
Fixed Income	34.51%	46.05%	33.30%	44.00%	66.70%	49.00%
Non-Fixed Income	65.49%	53.95%	66.70%	56.00%	33.30%	51.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source:
SSNIT Investment Policy Paper, December 1994.
SSNIT Investment Department Market Value of Assets at December 1997.
SSNIT 1998 and 1999 Budgets.

3.2 The review team identified that in addition to not adhering to the recommended investment policy, SSNIT had no methodology for allocating the investable funds to premium assets within both the FI and NFI assets classes to obtain the highest return for a given a level of risk.

3.3 A simulation spreadsheet, based on investment value of the Fund at year end 1999, reflecting an asset allocation mix of 67% and 33% of allocable funds, for the years 2000 to 2003, was used to forecast the total values of the portfolio, the overall asset allocation and expected real returns. A summary of the results of the simulation undertaken is

reflected in the table below. However, note that the total returns forecast may be inflated due to high yields assumed for some of the assets (e.g., corporate loans for which interest is accrued and capitalised). (See Chapter IV Appendix IVC for details on the spreadsheet and further explanation of assumptions used).

Table IV.3: Asset Allocation Scenario, 2000 - 2003

Year	Total Investable Funds (¢ billion)	Value of Investments at Year End (¢ billion)	End of Year Asset Mix for FI (%)	End of Year Asset Mix for NFI (%)	Real Rates of Return Realised*
2000	475	3,397	48.06%	51.92%	11.73%
2001	695	4,565	47.47%	52.53%	14.26%
2002	929	6,199	46.57%	53.43%	15.00%
2003	1,235	8,636	44.68%	55.32%	17.66%
* The real rate of return is computed on the basis of the expected nominal rate of return on each asset class and the projected inflation rates from the Ministry of Finance.					

3.4 The asset allocation model used in the simulation allows for simple diversification resulting in risk reduction by means of varied selection of non-dominated assets. The model is designed to assist in the annual allocation of investable funds to the premium asset classes within FI and NFI, given the investable funds available for the year and the projected capital market outcomes to obtain the portfolio's expected return. Until SSNIT conducts an asset/liability study and develops an analytic procedure (such as the Markowitz diversification model) that involves combining assets that are less than perfectly positively correlated to form efficient portfolios, they may utilize this model to determine how much to invest in the premium asset classes within FI and NFI.

3.5 While the above scenario reflects positive real returns over the four-year simulation period, it is based on the assumption that all projected contributions are received and all investment income earned is reinvested, which may not be the case. Additionally, significant changes in market yields (e.g., a reduction) and in the proportion of assets utilised could lower the rates of return substantially. The investment value at year-end moves gradually away from achieving an asset mix target of 67% FI and 33% NFI. This is primarily due to higher weighting of returns for the NFI assets (principally listed equities). These results suggest that the Trustees and Management need to revisit the institution's investment approach, along with other constraints highlighted in the report, in order to enhance overall returns and improve the soundness of the Pension Fund.

3.6 It should be also noted that allocations to both FI and NFI are influenced by the manner in which the Government satisfies its contributory obligations to SSNIT. In two separate transactions in 1998, Government satisfied part of its obligation with ¢45 billion worth of

unlisted securities and the issuance of a new ten year ¢19 billion bond. This action consequently resulted in an allocation to the NFI and FI classes, respectively. The fair market value and expected yields of the given unlisted securities are unknown, consequently, the performance of this portfolio on the total return of SSNIT's assets is uncertain. Additionally, in 1999, Government further issued a new ten year ¢23 billion bond and transferred 202,000 shares of Ghana Commercial Bank (a listed equity) in part settlement of its obligation in arrears. This action once again demonstrates the importance of external factors which influence SSNIT's allocation of investable funds.

3.7 While such debt/equity swaps result in the nominal recovery of outstanding government obligations, the process significantly contributes to SSNIT's non-adherence to established investment policy.

3.8 The Social Security Pension Scheme should establish a long-term asset allocation in the context of funding requirements of the Scheme and the long-term expected risk and return for each asset class. The asset allocation should be reviewed on an annual basis and rebalanced annually.

4. Approach to the Investment Process

4.1 Asset allocation is the process of choosing the best portions of investments from different asset categories. Individual securities are not analysed in asset allocation problems; instead the risk return statistics that are assumed to be representative of the different asset categories are analysed. To improve investment performance, a structured investment approach and philosophy is essential. This includes assessing and determining risk tolerance.

4.2 As part of the reform process for asset allocation and portfolio management, SSNIT should engage an investment advisor (See Chapter IV Appendix IVB explaining the basis for this recommendation) and establish an investment committee. The investment committee should comprise at least four members of the Board of Directors and the Director General (with the General Managers of the Investment, Operations and Administration Departments in attendance). The investment committee would have a fiduciary responsibility, adhering to the prudent "person" rule, to protect the purchasing power of the Fund's assets and to help improve investment return on a long-term basis.

4.3 In light of SSNIT's poor investment performance due to:

- lack of a structured investment approach and philosophy,
- poor coordination between the departments involved in investment decisions, and

- absence of established benchmarks for measuring performance of the in-house team and various asset classes in which SSNIT has invested,

the review team recommends that consideration be given to outsourcing management of substantial portions of the portfolio to the private sector.

4.4 For those investments outsourced, investment managers should be given full discretion over their portion of assets of the Trust, subject to the investment guidelines and benchmarks established for the portfolio. The Trustees will need to establish the terms of the contractual arrangements governing the relationship between the Pension Fund and each of the investment managers, as well as the investment guidelines to be followed by the investment managers. The performance of the investment managers should be evaluated against investment benchmarks recommended by the Investment Development Department and approved by the proposed investment committee.

4.5 Outsourcing options for investments need to be considered in phases in order to ensure an orderly transition from in-house funds management to external professional managers.

4.6 The various asset classes within the overall portfolio have different roles to play in helping SSNIT to pursue its investment policy objectives.

a. Certain assets serve a **Short Term Management Role** of maintaining adequate liquidity, while earning maximum possible short term returns with an acceptable degree of principal risk.

b. Another class of assets have a **Fixed Income Role** to diversify the total portfolio by providing representation in the debt market, which also has the associated characteristics of income generation and sensitivity to changes in interest rates.

c. A third class of assets can serve the **Equity Portfolio Role** of providing substantial real returns (in excess of inflation) to protect the Scheme's ability to pay benefits over the long-term.

d. A fourth asset class, to deal with the **Real Estate Portfolio Role**, is intended to provide stability and diversification to the total fund through investments which tend to preserve and expand capital during periods of high unanticipated inflation. A secondary role for this asset class is to serve development and social investment objectives which are in harmony with the public interest.

e. A fifth asset class has an **Alternative Investments Role**, which seeks to reduce overall portfolio risk through diversification, while achieving returns at least equal to those achieved on the public Ghanaian equity market. The participation in

nurturing of the private equity market and certain industries are secondary objectives for this asset class.

f. One other asset class has a **Special Purpose Role** to provide development-oriented investments in industries that are critical to the national economic development objectives, yet do not jeopardise the corpus of the Scheme. This asset class also serves the investment objective of being in harmony with the public interest.

g. The final asset class has a **Student Loan Role**, which is to support vital social investment in education, while earning reasonable returns in the medium to long-term.

4.7 The Management and Trustees of SSNIT should undertake an exercise to identify a sustainable approach to fund investment that is suited to their philosophy and objectives. Such an exercise would address:

- What is the financial character of the Fund?
- What is the financial strength of the Trust?
- What is the investment personality of the Fund?
- What practical investment objectives does the Trust need to establish?
- How should the Fund go about generating consistency in its investment approach?
- What is the "investor self" philosophy of the Trust?
- How should the Trust go about selecting reputable and qualified investment managers? And
- How should the Trust establish guidelines and performance targets to monitor and evaluate the fund managers?

4.8 The investment advisor, as proposed in this report, could assist the Management and Trustees in carrying out this exercise.

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Part A: Pension Fund and Investment Management

Chapter V: Conclusion and Recommendations

1. The Challenge of Reform

1.1 The review team for this report on SSNIT's Pension Scheme and other elements of the pension system believes that the foundation blocks for a comprehensive retirement system in Ghana have been laid. As the country proceeds on its quest toward achieving its "Vision 2020" goal, the welfare of its aging population should not be relegated to chance or happenstance. The review team urges that concerted effort be made by all stakeholders, namely, workers, employers and Government, to continue the building block approach in attaining a three-tier retirement system (social security, supplementary employer-related retirement benefit and individual retirement schemes).

2. Soundness of SSNIT

2.1 While social security is not intended as the only source of retirement income, currently it is most likely to provide the largest share of retirement income received. In light of this, the solvency and sustainability of, as well as increased participation in, the SSNIT Pension Scheme assume roles of much greater importance.

2.2 The review team thinks SSNIT's Pension Scheme is basically sound in its design and benefit payment structure. Given the relatively small, but rapidly growing, number of pensioners, the insured earnings rate was found to be adequate in meeting current pension benefit obligations and administrative expenses of the Scheme. However, the review team is concerned about the current operations of the Scheme, in terms of the low or negative real returns generated on investments and the seemingly high administrative expenses relative to contributions and benefits paid. Unless significant improvements can be achieved on those two fronts in the near future, the review team feels the financial health of SSNIT could deteriorate rapidly, jeopardising the Scheme's ability to meet its obligations.

3. Objectives of the Social Security Pension Scheme

3.1 The objectives of the Scheme, while clearly articulated, are contradictory in theory and practice, with the effect of undermining the protection of corpus. This erosion of the real value of the Fund and its ability to meet obligations derives mainly through investment

guidelines that encourage certain development-oriented activities which do not yield good, measurable real returns. These activities include, but are not limited to construction and rental of residential housing, as well as building schools, hospitals and industrial parks.

3.2 The review team acknowledges and accepts the objective of the Scheme to support investments that are in harmony with the public interest; but the team believes that the public interest will not be served by investing SSNIT's funds into projects that yield low or negative real returns to the nation. Moreover, the review team argues that deserving development-oriented projects, which may not be financially viable, should not be undertaken by SSNIT without the explicit support of Government to compensate SSNIT for any expected financial losses they may entail. In that way, the protection of corpus and SSNIT's ability to meet its financial obligations can be promoted while investments in harmony with the public interest can be pursued. The review team recommends that due consideration of these issues should be part and parcel of the Trustees' overall risk and return expectations for the scheme.

4. Data and Performance Measurement

4.1 The lack of a valuation of many of the Fund's assets and the heavy construction component of the portfolio created a major difficulty for the review team in trying to determine the real returns being generated by the SSNIT investment. The large investment portfolio in fixed assets, some of which is of a social and some an economic nature, is presently valued mainly at their acquisition cost. They may have appreciated or depreciated in real terms. Without undertaking a fair market valuation of these assets, it is impossible to determine, with any degree of certainty, the financial health of SSNIT, since these assets make up a large share of the investment portfolio (54% in 1997). This appraisal is important, because if these assets are not appreciating (and this asset class remains a significant share of the portfolio), it will be exceedingly difficult, if not impossible, for SSNIT to remain financially viable in the long term.

4.2 Knowledge of the financial performance of these assets is also important for SSNIT management as it negotiates with the Government as to the level of future investments in this asset class. This information is also needed by SSNIT management as it reviews its investment philosophy and manpower needs.

5. Manpower Requirements and Investment Management

5.1 Issues regarding manpower requirements are also related to the broader issue of the investment program. At present, the investment managers in SSNIT do not have the necessary background in management of corporate loans and unlisted equity assets. SSNIT senior management will need to decide whether they will need to develop such

expertise, or whether a preferred approach would be to develop exit strategies for the assets received through debt/equity swaps. A confidential and frank appraisal of this component of the portfolio may provide senior management with the data to argue for a reduction, if not a halt in the swaps. The appraisal should examine the present market value of assets, and evaluate to what extent the market value of an asset depends upon who manages it and the ability to charge market rentals.

6. Recommendations

6.1 The concerns regarding the investment portfolio, its returns and management, give rise to two sets of recommendations: 1) those dealing with an analytical review of the investment portfolio; and 2) those recommending alternative management approaches for the portfolio.

6.2 The first set of recommendations include:

- Undertake a fair market valuation study of the corporate loan and unlisted equity asset classes, with a view to reflecting market appreciation or depreciation in the underlying classes;
- Develop and evaluate various exit strategies for assets received through debt/equity swaps from Government;
- Review the investment policy recommendations of allocating funds to attain an asset allocation mix of 67% FI and 33% NFI; and
- Commission, in conjunction with the next actuarial review, a comprehensive review of the Pension Scheme, its objectives, its performance, its actuarial soundness, its operations and procedures, its information requirements and systems, its relationship with Government and its future strategic plans.

6.3 Secondly, based upon, and in line with, the above analysis, the review team recommends that the following administrative actions be taken:

- Establish an investment committee with fiduciary obligation to the Board;
- Engage a qualified resident investment advisor to properly assess the investment portfolio, advise on acquisitions and disposals, identify suitable staff, their training needs and suitable training programmes for SSNIT to develop adequate in-house investment management capabilities;
- Revisit the investment approach, in light of the analyses above, and establish an

investment philosophy which will guide the investment process in pursuing the organization's objectives;

- Engage Government in a dialogue to establish an appropriate relationship between Government and SSNIT with respect to timely payment of contributions and other obligations;

- Coordinate the investment activities under one department to ensure consistent data, dissemination of which is relied upon by management, as well as the actuarial and operational departments;

- Create a performance incentive system for various departments;

- Analyse the advantages and disadvantages of out-sourcing of certain investment activities (underwriting of corporate loans, acquisition and disposal of listed and unlisted equities) to professional investment managers; and

- Build an in-house investment skill set consistent with the portfolio management strategy adopted.

6.4 This review has concluded that there are serious problems facing SSNIT, which, if not confronted, threaten the soundness of the Pension Scheme. Implementation of the aforementioned recommendations, coupled with efforts improve pension administration, should provide assurance that the Fund will be sustainable and able to honour its retirement obligations as they come due in the future. The failure to work toward this goal could result in a bankrupt system in the not-too-distant future.

Review of the Social Security and National Insurance Trust and Other Elements of the Pension System with a View toward Modernisation

Part A: Pension Fund and Investment Management

Appendices

Part A, Chapter IV Appendices
Appendix IVA: Asset Allocation

In December 1994, SSNIT prepared a policy paper setting forth an investment policy and strategy to guide its asset allocation process and portfolio management activities. That policy, as enunciated below, continues to serve as the guiding principle for investment.

Selection of Asset Mix

In planning the investment of the Trust's pension funds, one of the most important objectives is to ensure that the assets of the Fund are adequate at all times to meet the promised liabilities. Assets of the Fund should be invested bearing in mind the six major requirements of investing social security funds, namely:

- High yield,
- Safety,
- Liquidity,
- Maintenance of asset value,
- Harmony with public interest, and
- Diversification.

In the absence of well-defined and historic information on investment performance indicators in Ghana about how various asset classes perform, there is the need to start with a simple model which could be improved with time for the purpose of finding an optimal, as well as an appropriate asset mix to give the desired yield on investments. The return on investments should be positive in real terms.

Investment Policy

The 1994 policy paper classified the total investment portfolio into two classes, Fixed Income investments (FI) and Non-Fixed Income investments (NFI). Prior to 1995, SSNIT only had a FI portfolio.

FI Components	*NFI Components*
Treasury Bills	Unlisted and Listed Equities
Fixed Deposit	Real Estate (Residential and Commercial)
Bank Deposits	Unit Trusts
Corporate Loans	Development-oriented Investment
Student Loans	
Government Bonds	- Hospitals
	- Transportation
	- Foreign Exchange Generation

- Industrial Estates
- Other Markets

In order to achieve a sustained pension scheme, it was recommended that:

- The portfolio mix must gradually be stabilised at a proportion of 67% and 33% for FI and NFI, respectively, and reviewed annually.
- The intra-portfolio mix (i.e., within FI and NFI) must be re-aligned to obtain higher rates of return.
- A Fund Ratio (i.e., the ratio of the market value of the pension fund to the annual payments for pension benefits and administrative expenses), which was felt to be optimum, of at least 8.0 should always be maintained.

Part A, Chapter IV Appendices
Appendix IVB: An Investment Advisor for SSNIT

The review has attempted to highlight the need for a change in investment approach by SSNIT. While the review was unable to clearly identify an asset allocation that would significantly enhance the overall return of SSNIT's portfolio, such a task is urgently needed. The review found that because SSNIT did not, at present, have an adequate in-house capability for investment management, it recommended that consideration be given to out-sourcing substantial portions of the portfolio.

Without wanting to criticise the existing staff for their efforts to do the best they could with the resources available, the review identified several examples where investment analysis errors were made, either in the construction of the investment policy guiding SSNIT's asset allocation or in the interpretation of basic investment data. Highlighting just a couple of examples may help to explain, therefore, why the review recommends that SSNIT engage a professional investment advisor, and initiate training plans to develop its in-house investment decision-making skills.

In the SSNIT Investment Policy Paper of May 1998, prepared by the Actuarial and Investment Departments, six major requirements of investing Social Security Funds are listed, viz.: high yield; safety; liquidity; maintenance of asset value; harmony with public interest; and diversification. The policy paper emphasises that:

> "the principal aim of the investment policy is to maintain the real value of the Fund at all times through the acquisition and retention of investments that will appreciate in value whilst conforming to these investment requirements. It is recognised that some of the above mentioned requirements would seem conflicting. For example, high yield and safety are not necessarily compatible. This can, however, be dealt with by aligning the portfolio to achieve an optimal mix."

That principal aim is all well and good. However, when the paper comes to review the investment performance from 1994 to 1997, it notes that the "asset in the FI (Fixed Income) group with the lowest return over the period was the HFC mortgage bonds (2.04% on average). In Appendices 1 and 2 of the paper, data are presented showing that the HFC Mort. Bonds (IL) increased in value from ¢5.964 billion in 1994 to ¢26.143 billion, while yielding returns that went from ¢30 million to ¢810 million over the same period. What seems missing is the recognition that the HFC Mortgage Bonds are index linked, thus ensuring (depending upon the index) they maintain their real asset value. To compare the nominal return on an index linked bond with the nominal returns earned on unindexed investments, when many of those investments have rates of return below the rate of inflation, is like comparing apples and oranges, and very misleading.

The second example concerns the model which SSNIT uses to identify the proportions of its investments to be allocated to either the fixed income or non-fixed income asset classes: 67%

fixed income, 33% non-fixed income. The model has also been used in earlier investment policy papers, and its use has been described as helping SSNIT to select an optimal asset mix. Unfortunately, the model is not an optimising model: it neither solves for an asset allocation that maximises return for a given level of risk (that the Board of SSNIT might be willing to bear), nor solves for an asset allocation that minimises the level of risk the Fund might suffer for a given level of return (that the Board might be satisfied in achieving).

Rather, the model solves for an asset allocation that yields a target real rate of return (2% is chosen as the target), given assumed real rates of return for the two asset classes (FI is assumed to have a 3% real rate of return, while that of NFI is assumed to be zero; although those assumptions are not shown in the 1998 paper, but in the 1994 paper). Having a portfolio comprised of two thirds of FI, which earns a real rate of return of 3%, and one third of NFI, which earns a real rate of return of 0%, yields the overall average portfolio return of 2%. The model used in no way takes into consideration the risks associated with each asset class, or with the underlying sub-class assets, or with the inter-relationships that might exist between the different assets which SSNIT might invest in. But, the model, as shown below, does include a term for assumed inflation, which nets out, and thus was not needed.

$$r_T = \alpha + I = (I + \theta)\delta + (I + \beta)(1 - \delta)$$

Where r_T is the total nominal return, α is the real rate of return on the portfolio, I is the rate of inflation, θ is the real rate of return on FI assets, β is the real rate of return on NFI assets, δ is the proportion of the portfolio allocated to FI investments and (1 - δ) is the proportion allocated to NFI assets. By just multiplying through the bracketed terms on the right hand side of the above equation and collecting terms, one can see that the rate of inflation washes out of the above equation and does not play any role in determining the shares of the portfolio that should be invested in FI and NFI instruments.

$$r_T = \alpha + I = I\delta + \theta\delta + I - I\delta + \beta(1 - \delta)$$

$$r_T = \alpha + I = \theta\delta + I + \beta(1 - \delta)$$

With I on both sides of the two right hand side expressions, it can be factored out to yield:

$$\alpha = \theta\delta + \beta(1 - \delta)$$

Such a model is not an appropriate tool for SSNIT to use it determining its asset allocation. But, a good investment advisor could assist SSNIT in reviewing the various assets in its portfolio, properly assess their real returns and perhaps develop information needed for risk-return analysis that could be used in deriving the optimal asset allocations, and other investment benchmarks and guidelines, that could be used by SSNIT in both managing its portfolio, and in monitoring and managing fund managers, if it chooses to outsource management of portions of its portfolio.

The 1998 Investment Policy Paper also states that the investment model assumptions include that the "Fund Ratio of the Scheme for any year is 8.0 or better." However, as can be seen from the above equation, the model does not incorporate in any way any mechanism or constraint to ensure that the Fund Ratio is 8.0 or greater.

Moreover, there were a variety of issues that could be identified from the Investment Policy Paper that suggest the need for an investment advisor who could clearly and succinctly present investment analysis information. A few examples of the issues from the 1998 Investment Policy Paper that support this conclusion include:

Page 4, Objective: "1. To maintain a long-term optimum Fund Ratio ... Through realisation of positive returns on investments" should be "Through realisation of positive real returns on investments." SSNIT has been achieving positive returns; but, according to their own estimates, they have been less than the rate of inflation, thus resulting in negative real returns.

Page 5, The statement "Fixed Income Investments are those whose returns are pre-determined or known at the time of making the investment" should be clarified to make explicit that it is only the nominal returns, barring default, which are known at the time of investment. The real rate of return is not known, unless the future rate of inflation is known and there is no risk to the repayment of principal and interest.

Page 13, ¶ 2: referring to the negative real rate of return achieved during the period, the statement "It is our opinion that a positive rate would have been attained had the proposed mix been pursued" is not valid according to the numbers given for the rates of return of the two asset classes and the rates of inflation. The paragraph above states that the Fixed Income asset class had an average nominal return of 22.51% and the Non-Fixed Income asset class 15.08%; both of which were below the average rate of inflation of 39.75% shown in ¶ 2. Moreover, there seems to have been some error in the calculations of both the average rate of inflation and the rates of return. Using the inflation data in Table 4 on page 11, the simple average rate of inflation over the period is 39.1975%, while the geometric average rate of inflation is 38.52%, not the 39.75% stated. That is a small difference.

But even the calculation of the real rates of return is not done properly, from an investment analysis point of view. Just subtracting the rate of inflation from the nominal rate of return yields an approximation of the real rate of return, which is not bad when the rate of inflation is low. But, with high, double digit inflation, the approximation is not very good. Using the more accurate equation,

$$r = \frac{(1+n)}{(1+\pi)} - 1$$

where "r" is the real rate of return, "n" is the nominal rate of return and π is the rate of inflation, the calculated real rate of return is a negative 15.6%, not the negative 24.4% shown in ¶ 2.

In addition, there are some strange calculations of the rates of return in the Appendices, as the table below attempts to highlight for the market values (from Appendix 1), income (from Appendix 2) and rates of return on assets (from Appendix 4) for the commercial property asset sub-class.

Commercial Property	1994	1995	1996	1997
Income (¢ million)	8676.00	705.60	192.00	192.00
Market Value (¢ million)	17832.00	15312.25	15850.00	15850.00
Rate of Return Shown	45.68%	2.18%	1.24%	1.22%
Rate of Return Calculated	48.65%	4.61%	1.21%	1.21%

As can be readily seen, it does not appear that the return for 1995 has been calculated on the basis of the income and market value of assets given. Nor can one easily explain why there are different estimates of the rate of return in 1996 and 1997, despite identical incomes and market values in those years. Unfortunately, neither the main body of text of the Investment Policy Paper, nor the Appendices provide any guidance on the calculations to help explain these anomalies.

One other query worth noting arises on page 12, where it is stated that, for the long term Fixed Income asset class proportion, "the target was 50.06% while the actual average was 37.00%". No where in the paper is it explained how the targets for sub-classes within FI and NFI, respectively, were obtained. As with the model for the overall allocations for FI and NFI investments, the issue of optimisation, taking into account risks and returns, remains.

The above examples serve to highlight areas where the current information and analysis provided by SSNIT suggest the need to acquire the services of a professional investment advisor, not only to undertake the quality work SSNIT needs done to help inform its investment decision process, but also to assess the training needs of its staff and help develop their capabilities.

Part A, Chapter IV Appendices
Appendix IVC: Asset Allocation Simulation Analysis

Tables IVC(i)-IVC(iv) attached show the outcome for an asset allocation of 67% and 33% of annual investable funds available over a four-year projection period, 2000-2003. Proportions and total value of the fund, including investment income from the prior year as at year-end 1999 (January 1, 2000), were used as the base figures from which to construct the projections. These projections were derived from SSNIT's 1998 Actuarial Report and its 1999 Budget.

Net Funds Available comprise the following:

In Cedis (Billions)	2000	2001	2002	2003
Contribution Inflow [a]	339.3	393.8	454.8	520.3
- Benefit Payments [b]	81.4	113.9	153.0	197.6
- Admin Expenses [c]	87.0	102.4	119.3	137.7
- Capex (3% of contributions) [d]	10.1	11.8	13.6	15.6
Net Funds Available [(a-b-c-d)]	160.8	165.7	168.9	169.4

To forecast, over the 4-year period, certain assumptions were made, they include:

- The investment income of the prior year is all reinvested in the next year.
- Treasury bill and fixed deposit rates for the Year 2000 were based on current rates, but decreased slightly in subsequent years based on predictions of lower inflation and lower interest rates. Proportions utilised where based on the investment yielding the higher rate of return.
- Current rates for outstanding long-term fixed income investments, government bonds, registered stock and HFC mortgages bonds were utilised in the Year 2000, subsequent rate changes and proportions for new bonds are in line with SSNIT's forecast for the Year 2000. Projected rates for the Year 2000 were maintained throughout the 4-year period.
- Proportions used for student loans are 1/12 of total funds available for investment each year, in line with SSNIT's asset allocation policy. Rates for the student loans remained in line with treasury bill rates.
- Existing corporate loan rates presently average 35%, however, the rates were reduced to 26% in the Year 2000 and 26% thereafter to take into consideration non-performing loans, a possible right-off or a discounting of the loan portfolio.
- Proportions used for the non-fixed investments are in line with historical trends. Market rates were based on lower forecasts for average market rates realised over past years. For example rates for listed equities were approximately 69% in 1998, and industry analysts forecast 45% or less for 1999 and thereafter.
- According to SSNIT's 1998 and 1999 Budgets, rates of return earned from unlisted equities have averaged over 30%. However, based on indications by SSNIT of an intention to dispose of the under performing assets, the rate of return was reduced to 21% and maintained over the projected 4-year period.

Note: Proportions used are in line with historical trends to attain the 67% and 33% asset allocation target and highest rate of return.

PART A, CHAPTER IV APPENDIX: TABLE IVC(i) ASSET ALLOCATION SIMULATION FOR YEAR 2000 (66.6%/33.4%)

	INVESTMENT AT 1/1/2000	AMOUNT (C'B)	% OF YEAR INVESTABLE FUNDS	TOTAL FUNDS INVESTED	% OF TOTAL INVESTMENT	CAPITAL MARKET RATES	RETURN AMT(C'B)	RATE OF RETURN (%)	INVESTMENT VALUE AT 12/31, 2000	AS % OF INVESTMENT
NET FUNDS AVAILABLE***		161.0								
INVESTMENT INCOME (PRIOR YEAR)		314.0								
TOTAL INVESTABLE FUNDS		475.0								
A. FIXED INCOME INVESTMENT:										
(i) SHORT/MEDIUM TERM:										
TREASURY BILLS/NOTES	237.0	99.8	21.00%	336.8	11.74%	19.00%	64.0	19.00%	400.73	11.80%
FIXED DEPOSIT/CALL MONIES	414.0	123.5	26.00%	537.5	18.74%	21.00%	112.9	21.00%	650.38	19.14%
SUB-TOTAL	651.0	223.3	47.00%	874.3	30.48%		176.9	20.23%	1051.11	30.94%
(ii) LONG TERM:										
REGISTERED STOCKS	0.5	0.0	0.00%	0.5	0.02%	16.50%	0.1	16.50%	0.58	0.02%
GOVERNMENT BONDS- 1	32.8	0.0	0.00%	32.8	1.14%	10.00%	3.3	10.00%	36.08	1.06%
GOVERNMENT BONDS-2	18.3	0.0	0.00%	18.3	0.64%	15.00%	2.8	15.00%	21.05	0.62%
GOVERNMENT BONDS-3	19.9	0.0	0.00%	19.9	0.69%	12.00%	2.4	12.00%	22.29	0.66%
NEW GOVT. BONDS			0.00%							
HFC MORTGAGE BONDS (I.L.)	26.0		0.00%	26.0	0.91%	33.50%	8.7	33.50%	34.71	1.02%
NEW HFC		28.5	6.00%	28.5	0.99%	21.60%	6.2	21.60%	34.66	1.02%
CORPORATE LOANS	161.8		0.00%	161.8	5.64%	28.00%	45.3	28.00%	207.10	6.10%
NEW CORP. LOANS		24.6	5.18%	24.6	0.86%	25.00%	6.2	25.00%	30.76	0.91%
STUDENT LOANS	123.4		0.00%	123.4	4.30%	19.00%	23.5	19.00%	146.89	4.32%
NEW STUDENT LOANS		40.0	8.42%	40.0	1.39%	19.00%	7.6	19.00%	47.60	1.40%
SUB-TOTAL	382.7	93.1	19.60%	475.9	16.59%		105.9	22.25%	581.72	17.12%
TOTAL [FI]	1033.7	316.4	66.60%	1350.1	47.06%		282.7	20.94%	1632.82	48.06%
B. NON-FIXED INCOME INVESTMENT:										
(i) EQUITY HOLDINGS:										
LISTED	471.0	95.0	20.00%	566.0	19.73%	35.00%	198.1	35.00%	764.10	22.49%
UNLISTED	145.0	26.1	5.50%	171.1	5.97%	21.00%	22.0	21.00%	193.17	5.69%
SUB-TOTAL	616.0	121.1	25.50%	737.1	25.70%		220.1	55.98%	957.27	28.18%
(ii) PROPERTY DEVELOPMENT:										
RESIDENTIAL	270.0	13.3	2.80%	283.3	9.88%	8.00%	22.7	8.00%	305.96	9.01%
COMMERCIAL	95.0	10.0	2.10%	105.0	3.66%	3.00%	3.2	0.21%	108.12	3.18%
ON-GOING PROJECTS	379.0	14.3	3.00%	393.3	13.71%	0.00%	0.0	0.00%	393.25	11.57%
SUB-TOTAL	744.0	37.5	7.90%	781.5	27.24%		25.8	0.90%	807.34	23.76%
TOTAL [NFI]	1360.0	158.7	33.40%	1518.0	52.94%		246.0	16.20%	1763.96	51.92%
TOTAL INVESTMENT	2393.7	475.0	100.00%	2868.7	100.00%		528.7	18.43%	3397.43	100.00%
NOMINAL RETURN								18.43%	18.43%	
INFLATION RATE*								6.00%	10.00%	**
REAL RATE OF RETURN								11.73%	7.66%	

* SOURCE: 1999 MINISTRY OF FINANCE BUDGET; ** ASSUMED INCREASE INFLATION RATE; *** SOURCE: 1998 ACTUARIAL REPORT AND BUDGET (SEE CHAPTER III APPENDIX 3C FOR DETAILS); NOTE: THE SUB-TOTALS OF RORs ARE WEIGHTED RETURNS AND DO NOT ADD UP VERTICALLY

PART A, CHAPTER IV APPENDIX: TABLE IVC (ii), YEAR 2001 ASSET ALLOCATION SIMULATION (66.6%/33.4%)

	INVESTMENT AT 1/1/2000	AMOUNT (C'B)	% OF YEAR INVESTABLE FUNDS	TOTAL FUNDS INVESTED	% OF TOTAL INVESTMENT	CAPITAL MARKET RATES	RETURN AMT(C'B)	RATE OF RETURN (%)	INVESTMENT VALUE AT 12/31, 2000	AS % OF INVESTMENT
NET FUNDS AVAILABLE***		166.0								
INVESTMENT INCOME (PRIOR YEAR)		528.7								
TOTAL INVESTABLE FUNDS		694.7								
A. FIXED INCOME INVESTMENT:										
(i) SHORT/MEDIUM TERM:										
TREASURY BILLS/NOTES	356.0	138.9	20.00%	494.9	13.01%	18.0%	89.1	18.00%	584.0	12.80%
FIXED DEPOSIT/CALL MONIES	514.0	159.8	23.00%	673.8	17.71%	20.0%	134.8	20.00%	808.5	17.72%
SUB-TOTAL	870.0	298.7	43.00%	1168.7	30.72%		223.8	19.15%	1392.6	30.51%
(ii) LONG TERM:										
REGISTERED STOCKS	0.5	0.0	0.00%	0.5	0.01%	16.5%	0.1	16.50%	0.6	0.01%
GOVERNMENT BONDS- 1	32.8	0.0	0.00%	32.8	0.86%	10.0%	3.3	10.00%	36.1	0.79%
GOVERNMENT BONDS-2	18.0	0.0	0.00%	18.0	0.47%	15.0%	2.7	15.00%	20.7	0.45%
GOVERNMENT BONDS-3	20.0	0.0	0.00%	20.0	0.53%	12.0%	2.4	12.00%	22.4	0.49%
NEW GOVT. BONDS	0.0	55.7	5.06%	55.7	1.46%	12.0%	6.7	12.00%	62.4	1.37%
HFC MORTGAGE BONDS (I.L.)	26.0		0.00%	26.0	0.68%	33.5%	8.7	33.50%	34.7	0.76%
NEW HFC	29.0	41.7	6.00%	70.7	1.86%	21.6%	15.3	21.60%	86.0	1.88%
CORPORATE LOANS	162.0		0.00%	162.0	4.26%	26.0%	42.1	26.00%	204.1	4.47%
NEW CORP. LOANS	24.0	28.6	4.12%	52.6	1.38%	25.0%	13.2	25.00%	65.8	1.44%
STUDENT LOANS	123.0		0.00%	123.0	3.23%	18.0%	22.1	18.00%	145.1	3.18%
NEW STUDENT LOANS	40.0	58.5	8.42%	98.5	2.59%	18.0%	17.7	18.00%	116.2	2.55%
SUB-TOTAL	475.3	164.0	23.60%	639.3	17.34%		134.3	21.00%	773.5	16.95%
TOTAL [FI]	1345.3	462.7	66.60%	1808.0	48.06%		358.1	19.81%	2166.1	47.46%
B. NON-FIXED INCOME INVESTMENT:										
(i) EQUITY HOLDINGS:										
LISTED	764.1	138.9	20.00%	903.0	23.74%	35.0%	316.1	35.00%	1219.1	26.71%
UNLISTED	193.2	38.2	5.50%	231.4	6.08%	21.0%	48.6	21.00%	280.0	6.13%
SUB-TOTAL	957.3	177.1	25.50%	1134.4	29.82%		364.7	32.14%	1499.1	32.85%
(ii) PROPERTY DEVELOPMENT:										
RESIDENTIAL	306.0	19.5	2.80%	325.4	8.55%	9.0%	29.3	9.00%	354.7	7.77%
COMMERCIAL	108.1	14.6	2.10%	122.7	3.23%	6.0%	7.4	6.00%	130.1	2.85%
ON-GOING PROJECTS	393.3	20.8	3.00%	414.1	10.88%	0.0%	0.0	0.00%	414.1	9.07%
SUB-TOTAL	807.3	54.9	7.90%	862.2	22.66%		36.7	4.25%	898.9	19.69%
TOTAL [NFI]	1764.6	232.0	33.40%	1996.6	52.48%		401.3	20.10%	2397.9	52.54%
TOTAL INVESTMENT	3109.9	694.7	100.00%	3804.6	100.00%		759.4	19.96%	4564.0	100.00%
NOMINAL RETURN								19.96%	19.96%	
INFLATION RATE*								5.00%	8.50%	**
REAL RATE OF RETURN								14.25%	10.56%	

NOTE: SOME OF THE COLUMNS MAY NOT ADD UP TO TOTALS DUE TO ROUNDING, BUT THESE HAVE NOT AFFECTED THE OUTCOME OF THE ANALYSIS.

PART A, CHAPTER IV APPENDIX: TABLE IVC (iii), YEAR 2002 ASSET ALLOCATION SIMULATION (66.6%/33.4%)

	INVESTMENT AT 1/1/2000	AMOUNT (C'B)	% OF YEAR INVESTABLE FUNDS	TOTAL FUNDS INVESTED	% OF TOTAL INVESTMENT	CAPITAL MARKET RATES	RETURN AMT(C'B)	RATE OF RETURN (%)	INVESTMENT VALUE AT 12/31, 2000	AS % OF INVESTMENT
NET FUNDS AVAILABLE***		169.0								
INVESTMENT INCOME (PRIOR YEAR)		759.4								
TOTAL INVESTABLE FUNDS		928.4								
A. FIXED INCOME INVESTMENT:										
(i) SHORT/MEDIUM TERM:										
TREASURY BILLS/NOTES	494.9	195.0	21.00%	689.9	13.44%	17.00%	117.3	17.00%	807.2	13.02%
FIXED DEPOSIT/CALL MONIES	673.8	241.4	26.00%	915.2	17.82%	19.00%	173.9	19.00%	1089.1	17.57%
SUB-TOTAL	1168.7	436.4	47.00%	1605.1	31.26%		291.2	18.14%	1896.2	30.59%
(ii) LONG TERM:										
REGISTERED STOCKS	0.5	0.0	0.00%	0.5	0.01%	16.50%	0.1	16.50%	0.6	0.01%
GOVERNMENT BONDS- 1	32.8	0.0	0.00%	32.8	0.64%	10.00%	3.3	10.00%	36.1	0.58%
GOVERNMENT BONDS-2	18.0	0.0	0.00%	18.0	0.35%	15.00%	2.7	15.00%	20.7	0.33%
GOVERNMENT BONDS-3	20.0	0.0	0.00%	20.0	0.39%	12.00%	2.4	12.00%	22.4	0.36%
NEW GOVT. BONDS	55.7		0.00%	55.7	1.08%	12.00%	6.7	12.00%	62.4	1.01%
HFC MORTGAGE BONDS (I.L.)	26.0		0.00%	26.0	0.51%	33.50%	8.7	33.50%	34.7	0.56%
NEW HFC	70.7	55.7	6.00%	126.4	2.46%	21.60%	27.3	21.60%	153.7	2.48%
CORPORATE LOANS	162.0		0.00%	162.0	3.16%	26.00%	42.1	26.00%	204.1	3.29%
NEW CORP. LOANS	52.6	48.1	5.18%	100.7	1.96%	25.00%	25.2	25.00%	125.9	2.03%
STUDENT LOANS	123.0		0.00%	123.0	2.40%	17.00%	20.9	17.00%	143.9	2.32%
NEW STUDENT LOANS	98.5	78.2	8.42%	176.7	3.44%	17.00%	30.0	17.00%	206.7	3.33%
SUB-TOTAL	639.3	182.0	19.60%	821.2	15.99%		169.4	20.63%	990.6	15.98%
TOTAL [FI]	1808.0	618.3	66.60%	2426.3	47.26%		460.6	18.98%	2886.9	46.57%
B. NON-FIXED INCOME INVESTMENT:										
(i) EQUITY HOLDINGS:										
LISTED	1219.1	185.7	20.00%	1404.8	27.36%	35.00%	491.7	35.00%	1896.5	30.59%
UNLISTED	280.0	51.1	5.50%	331.0	6.45%	21.00%	69.5	21.00%	400.6	6.46%
SUB-TOTAL	1499.1	236.8	25.50%	1735.8	33.81%		561.2	32.33%	2297.0	37.05%
(ii) PROPERTY DEVELOPMENT:										
RESIDENTIAL	354.7	26.0	2.80%	380.7	7.41%	9.00%	34.3	9.00%	415.0	6.69%
COMMERCIAL	130.1	19.5	2.10%	149.6	2.91%	6.00%	9.0	6.00%	158.6	2.56%
ON-GOING PROJECTS	414.1	27.9	3.00%	441.9	8.61%	0.00%	0.0	0.00%	441.9	7.13%
SUB-TOTAL	898.9	73.3	7.90%	972.2	18.94%		43.2	4.45%	1015.5	16.38%
TOTAL [NFI]	2397.9	310.1	33.40%	2708.0	52.74%		604.4	22.32%	3312.5	53.43%
TOTAL INVESTMENT	4205.9	928.4	100.00%	5134.3	100.00%		1065.0	20.74%	6199.3	100.00%
NOMINAL RETURN								20.74%	0.2	
INFLATION RATE*								5.00%	0.1	**
REAL RATE OF RETURN								14.99%	0.1	

NOTE: SOME OF THE COLUMNS MAY NOT ADD UP TO TOTALS DUE TO ROUNDING, BUT THESE HAVE NOT AFFECTED THE OUTCOME OF THE ANALYSIS.

PART A, CHAPTER IV APPENDIX: TABLE IVC (iv), YEAR 2003 ASSET ALLOCATION SIMULATION (66.6%/33.4%)

	INVESTMENT AT 1/1/2000	AMOUNT (C'B)	% OF YEAR INVESTABLE FUNDS	TOTAL FUNDS INVESTED	% OF TOTAL INVESTMENT	CAPITAL MARKET RATES	RETURN AMT(C'B)	RATE OF RETURN (%)	INVESTMENT VALUE AT 12/31, 2000	AS % OF INVESTMENT
NET FUNDS AVAILABLE***		169.4								
INVESTMENT INCOME (PRIOR YEAR)		1065.0								
TOTAL INVESTABLE FUNDS		1234.4								
A. FIXED INCOME INVESTMENT:										
(i) SHORT/MEDIUM TERM:										
TREASURY BILLS/NOTES	689.9	259.2	21.00%	949.1	13.61%	16.00%	151.9	16.00%	1101.0	12.75%
FIXED DEPOSIT/CALL MONIES	915.2	320.9	26.00%	1236.1	17.73%	18.00%	222.5	18.00%	1458.6	16.89%
SUB-TOTAL	1605.1	580.2	47.00%	2185.2	31.34%		374.4	17.13%	2559.6	29.64%
(ii) LONG TERM:										
REGISTERED STOCKS	0.5	0.0	0.00%	0.5	0.01%	16.50%	0.1	16.50%	0.6	0.01%
GOVERNMENT BONDS- 1	32.8	0.0	0.00%	32.8	0.47%	10.00%	3.3	10.00%	36.1	0.42%
GOVERNMENT BONDS-2	18.0	0.0	0.00%	18.0	0.26%	15.00%	2.7	15.00%	20.7	0.24%
GOVERNMENT BONDS-3	20.0	0.0	0.00%	20.0	0.29%	12.00%	2.4	12.00%	22.4	0.26%
NEW GOVT. BONDS	55.7		0.00%	55.7	0.80%	12.00%	6.7	12.00%	62.4	0.72%
HFC MORTGAGE BONDS (I.L.)	26.0		0.00%	26.0	0.37%	33.50%	8.7	33.50%	34.7	0.40%
NEW HFC	126.4	74.1	6.00%	200.5	2.87%	21.60%	43.3	21.60%	243.7	2.82%
CORPORATE LOANS	162.0		0.00%	162.0	2.32%	26.00%	42.1	26.00%	204.1	2.36%
NEW CORP. LOANS	100.7	63.9	5.18%	164.7	2.36%	25.00%	41.2	25.00%	205.8	2.38%
STUDENT LOANS	123.0		0.00%	123.0	1.76%	16.00%	19.7	16.00%	142.7	1.65%
NEW STUDENT LOANS	176.7	103.9	8.42%	280.6	4.02%	16.00%	44.9	16.00%	325.5	3.77%
SUB-TOTAL	841.8	241.9	19.60%	1083.7	15.54%		215.0	19.84%	1298.7	15.04%
TOTAL (FI)	2426.3	822.1	66.60%	3248.4	46.58%		589.4	18.14%	3858.3	44.68%
B. NON-FIXED INCOME INVESTMENT:										
(i) EQUITY HOLDINGS:										
LISTED	1896.5	246.9	20.00%	2143.3	30.74%	35.00%	750.2	35.00%	2893.5	33.51%
UNLISTED	400.6	67.9	5.50%	468.4	6.72%	21.00%	98.4	21.00%	566.8	6.56%
SUB-TOTAL	2297.0	314.8	25.50%	2611.8	37.46%		848.5	32.49%	3460.3	40.07%
(II) PROPERTY DEVELOPMENT:										
RESIDENTIAL	415.0	34.6	2.80%	449.5	6.45%	9.00%	40.5	9.00%	490.0	5.67%
COMMERCIAL	158.6	25.9	2.10%	184.5	2.65%	6.00%	11.1	6.00%	195.5	2.26%
ON-GOING PROJECTS	441.9	37.0	3.00%	479.0	6.87%	0.00%	0.0	0.00%	479.0	5.55%
SUB-TOTAL	1015.4	97.5	7.90%	1113.0	15.96%		204.0	18.33%	1164.5	13.48%
TOTAL (NFI)	3312.5	412.3	33.40%	3724.7	53.40%		1052.5	28.26%	4777.3	55.32%
TOTAL INVESTMENT	5738.7	1234.4	100.00%	6973.1	100.00%		1641.9	23.55%	8635.6	100.00%
NOMINAL RETURN								23.55%	23.55%	
INFLATION RATE*								5.00%	6.00%	**
REAL RATE OF RETURN								17.66%	16.56%	

NOTE: SOME OF THE COLUMNS MAY NOT ADD UP TO TOTALS DUE TO ROUNDING, BUT THESE HAVE NOT AFFECTED THE OUTCOME OF THE ANALYSIS.

Research Sources (Institutions Visited and Publications, Documents and other Materials)

Institutions Visited or Contacted

- Bank of Ghana
- State Insurance Corporation
- Ghana Stock Exchange
- Social Security and National Insurance Trust
  - Student Loan Department
  - Actuarial Department
  - Project/Real Estate Department
  - Operations and Administrative Departments
- P.O. Andah and Associates
- Internal Revenue Service
- Metropolitan Life Insurance Co. Limited
- CDH Asset Management Co. Limited
- Home Finance Company Limited
- Databank Financial Services Limited
- Merbank Company Limited
- SSB Bank Limited
- Gold Coast Securities Limited
- CAL Merchant Bank Limited
- Agricultural Development Bank Limited

Research Materials

- Report of the Third Actuarial Review of the Pension Scheme, Francisco R. Bayo and SSNIT Actuarial Staff, 1996
- Investment Strategy for the Next Millennium, SSNIT
- Guidelines for Investment and Development Division, SSNIT, January 1998
- SSNIT Investment Policy Review Paper, SSNIT Actuarial/Investment Departments, May 1998
- SSNIT Investment Policy, SSNIT, December 1994
- Social Security Law, PNDCL 247, 1991
- Annual Statistical Report 1997, SSNIT Research Department, March 1998
- Fact Book 1997, Ghana Stock Exchange
- SSNIT Regulations, Ordinance No. 42 of 1950, Pensions, CAP 30
- Monthly Operational Report, Student Loan Department, SSNIT, October 1998
- Life Table for the Black Population, United States, 1969-91 (Tables 10-12), Vol.1, No. 1
- Budgeted Financial Summaries, 1998 & 1999, SSNIT
- SSNIT Annual Report, Year Ended December 31st, 1996 & 1997 draft (Auditors: Coopers and Lybrand, Chartered Accountants
- Report on the 1998 Actuarial Valuation, SSNIT, August 1998
- Bank of Ghana, Quarterly Economic Bulletin, October-December 1998