

INCOME REPLACEMENT RATES IN KENYA: THE CHALLENGES

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June, 2009

TABLE OF CONTENTS

ii) Acronyms.....	2
1.0 BACKGROUND.....	3
1.1 Introduction.....	3
1.2 Statement of the Problem.....	3
1.3 Research Objectives.....	5
1.4 Survey Limitation.....	5
2.0 CHALLENGES AND MEASURES TAKEN.....	6
2.1 Challenges Faced in Kenya.....	6
2.2 What has RBA Done to Overcoming the Challenges	9
3.0 LITERATURE REVIEW	11
5.0 DATA ANALYSIS AND METHODOLOGY.....	15
5.1 Data.....	15
5.2 Methodology	15
5.3 Research Findings.....	17
6.0 CONCLUSION AND RECOMMENDATIONS.....	19
6.1 Conclusion.....	19
6.2 Recommendations	19
7.0 APPENDICES	22
7.1 Appendix 1: Tax Schedule for Retirement Benefits Savings	22
7.2 Appendix 2: Raw Data	23
7.3 Appendix 3: Monthly Pension Replacement Rate.....	29
7.4 Appendix 4: Lumpsum Replacement Rate.....	34
8.0 REFERENCE.....	39

ii) Acronyms

DB	Defined Benefits Schemes
DC	Defined Contributions Schemes
OECD	Organisation of Economic Cooperation and Development
NSSF	National Social Security Fund
RBA	Retirement Benefits Authority

1.0 BACKGROUND

1.1 Introduction

The third corporate objective of the Retirement Benefits Authority as stated “Increase the Income Replacement Rate to 35% from 20% by 2009” while easy to articulate on paper is by no means an easy task to achieve. Kenya’s estimated overall retirement benefits replacement rate falls far below the ILO recommended rate of 40% per couple. In comparison, this percentage tails further behind those of the developed countries’ average of 60% - 70% such as in Demark, Sweden, Australia and Germany and as high as 102% in Luxembourg.

The definition of Pension Replacement rate according to the OECD glossary is a measure of how effectively a pension system provides income during retirement to replace earnings which were the main source of income prior to retirement of workers. In the words of S. Cersaratto “Retirement benefits should do more than prevent destitution in old age but should ensure a reasonable correspondence between pre and post retirement living standards”. Replacement rate is thus a yardstick for measuring the effectiveness of retirement benefits systems. The Retirement Benefits Authority (RBA) therefore has to identify and address the looming challenges and hurdles that hinder the attainment of high income replacement rate.

Retirement benefits system constitute the different tiers of retirement benefits arrangements which conventionally include the first tier unfunded government social security schemes, the second tier mandatory retirement benefits schemes and the third tier additional self-driven voluntary savings preserved for retirement. The retirement benefits systems are usually driven by a twin vision of income distribution and targeted reasonable income replacement rate. Income distribution is done using the first tier. The second and third tiers achieve a targeted income replacement rate in retirement. Since all three are supplementary, retirement benefits systems that have all three tiers, yield higher replacement rate.

1.2 Statement of the Problem

From the Pensioners and Retiree Surveys conducted in the early 2001 and 2008¹ by RBA, it is eminent that retirement benefits pension earnings constitute a cherished source of income to retirees even though it neither forms the only source nor the highest income. Majority 57

¹ Survey of Pensioners and Retirees by the Retirement Benefits Authority 2002, 2004, 2005

percent of retirees interviewed in 2008 ranked income from pension as their first and most important source of income. Pension income provided a guaranteed periodic flow (mostly monthly) of income. Retirees receiving pension income were highly credit rated. They were able to access goods and services on credit easily. Income from small business operations and other business ventures even though often fetched higher incomes were ranked below pension income because they were irregular or a one off lump-sum payment thus, were regarded as unreliable and uncertain.

However, the important role of retirement savings accumulation is undermined by the Kenyan worker as is attested by the national outcry and frequently vetted rule on preservation of retirement benefits savings. The rule enforces the locking in of employer portion of accumulated benefits until retirement age (commonly at over 50 years).

In the just concluded Members Survey 2009, only a minority 34 percent support the Preservation Rule compared to **mmmmmm** . Operating small businesses and ownership of property and financial investments are perceived by the average majority to be the more secure way of providing income for old age. Unfortunately studies have shown that small scale businesses face a lot more risks of a closure and failure within the first three years of existence. It is estimated that ninety percent of small businesses close down within a span of three years due to business management incompetence, poor book keeping and competition among many factors.

In comparison, investing in retirement benefits savings arrangements has several advantages:

1. Joining a retirement benefits scheme is easy. There are no upfront costs.
2. The administration costs of these schemes are relatively small due to economies of scale. This translates into low per unit cost.
3. Retirement benefits investments are overseen by investment professionals and a government regulatory body that guarantee proportionate returns with minimal involvement of the individual. Investments responsibilities are transferred to fund managers who enable members enjoy expertise services in areas where individuals may be incompetent.
4. Retirement savings by virtue of mobilising small individual savings into a big pool of savings, enables individuals benefit from a diversified investments portfolio that they otherwise would not have afforded on their own.
5. Savings through retirement plans permits investment continuity for a much longer period (until retirement) even when a member's capacity to make contributions is challenged. Members accrued benefits continue to earn interest.

6. The retirement benefits savings provide income that not only benefits the principal members but also benefits family dependants of the principal member in the event of premature death or in cases of terminal ill health and disability.
7. Retirement Savings are tax exempt at the contribution and investment return levels.
8. When employers match contributions with that of the employees the total savings pot is increased.

It is for these reasons that the RBA has embarked on the journey to improve the pension income replacement rate by 2009 through researching and advocating for pension reform options that will increase the replacement rates across members of pension schemes.

1.3 Research Objectives

The main objective of this research is to spell out the inherent challenges of increasing benefits replacement rates in Kenya to the desired target. Specifically the research objectives will be:

1. Identify the challenges and hurdles the Retirement Benefits is faced with in achieving this objective
2. What the Retirement Benefits Authority has done to address the low income replacement rate
3. Impact of RBA initiatives towards increasing retirement benefits replacement rates
4. What have other countries done to achieve high income replacement rates -
5. Provide Recommendations.

1.4 Survey Limitation

The existing and available dataset does not contain sufficient enough information to carry out a comprehensive analysis in detail of the replacement rate in Kenya. The methodology in this paper, uses the data available from the two pensioner surveys that have been carried out by RBA in 2008 to conduct cross sectional analysis. Further research needs to be conducted premised on better and more precise dataset.

2.0 CHALLENGES AND MEASURES TAKEN

2.1 Challenges Faced in Kenya

From literature and empirical evidence, income replacement rate is dependent on factors such as the return on investments, period of uninterrupted savings, contribution rates, annuity rates, accrual factor, wage indexation and taxation rates. The other eminent factor that contributes to high replacement rate is how founded a retirement benefits system is. A system which has all the three tiers retirement benefits arrangements that provides cover to majority of the citizens combined benefits put together tend to have higher replacement rates.

Based on the above, a number of challenges can be indentified with the Kenyan retirement benefits systems.

1. **Threats on Reversal and Slow Acceptance of the Preservation Rule:** Ever since the introduction of the rule in 2005, there has been a never ending debate on the Preservation Rule. The rule mandates the locking-in of employer portion of contribution until retirement unless under allowable conditions². Only a measly 14 percent in the Member survey conducted in 2007 wholly embraced the preservation rule. The number increased to 38 percent in the 2009 member survey. Majority still disfavour the preservation rule.
2. **Absence of Old Aged State Funded Schemes:** Kenya has no first tier state funded old age pension scheme like the OECD countries. Retirees rely largely on employee and employer contributory savings accrued in occupational and individual retirement benefits schemes. Old age pension schemes automatically provide cover to members even in periods of unemployment.

² Members or beneficiaries of retirement benefits schemes can access their entire vested and accrued benefits before the stipulated retirement age in the case of terminal ill health, in the event of death of the principal member and if emigrating out of the country with the intention of not coming back. Authenticating documents must be exhibited prior to access of the benefits.

3. **Attitude towards saving for Retirement:** Kenyans and especially the youth prefer material possession such as owning real property, than keep financial assets as retirement saving. Retirement is perceived far off event of life and a preserve of the older cohorts. This goes against the fact that the earlier one starts and the longer the period of uninterrupted savings the higher the replacement rate.
4. **Widespread Financial illiteracy:** The lack of understanding and ignorance that the nature of retirement benefits savings is long term and unlike short term savings, it should not be readily accessed. On the overall, the national savings in Kenya is low. Consequently, upon termination, retirement benefits savings always become the first fall back.
5. **Annuity Rates:** In Kenya many pension retirement benefits schemes depend on annuity contracts to commute accrued benefits into pension. Income draw down an alternative pathway is uncommon. The Annuity markets offer relatively low annuity rates because of uncompetitive market structure and use of outdated life tables yield low replacement rates.
6. **Short Periods of Saving for Retirement:** From the pensioners survey, not all retirees participated in saving for their retirement in the all their years of work. There are cases of retirees having worked in salaried employment for forty years but only saved for retirement period of for five years. A full career worker is one regarded to have saved uninterrupted for 40 years. The longer the period of saving, the higher the replacement rate in retirement.
7. **Investment Returns on Contribution:** Over 75 percent of retirement benefits schemes are defined contributions schemes. These are the equivalent of money or cash balance schemes and rely heavily on the investment returns. However, majority 69 percent of the retirement benefits schemes are invested in guaranteed funds. These funds return relatively low market returns for a good part of the investment period especially in times of equity appreciation. The highest return recorded for guaranteed funds is 13 percent and the lowest 5 percent in 2007 against the high returns of 19 percent by fund managers. The National Social Security fund which is a notional scheme promises a

paltry return of 2.5 percent annually. The consequent of the poor returns are low income replacement rates in retirement.

- 8. Lack of Indexation:** The indexation of pension income is rarely applied in Kenya. Pension income is rarely adjusted to reflect the cost of living changes. Pensioners are therefore subjected to impoverished lifestyles because the real value of pension income diminishes overtime due high inflation rates of the magnitude of 26 percent in 2008.
- 9. Preference for Provident Fund:** There is an eminent drift from pension designed schemes to provident schemes in the Kenyan retirement benefits sector both in the case of existing schemes the newly registered schemes. Provident funds enable members to commute all their benefits in one lumpsum upon retirement whereas pension allows a maximum lumpsum of one third. Access to lumpsum amounts is usually exposes members to spendthrift kind of lifestyles that threatens the sustainability of accrued benefits funds to provide lifetime cover for the retirees. In addition, the relative replacement rate is reduced since access to entire accrued benefits denies the provident fund scheme members from enjoying the tax exemptions on pension income. A retiree drawing monthly pension income enjoys up to Kshs 26,000 tax free income. This amount will increase starting Jan 2010 to Kshs 36,000 per month.
- 10. Accrual Factor:** Unlike the developed countries, the accrual factor for defined benefits schemes is very low. The most generous and highest accrual factor is 0.42 percent compared to up 3 percent in Spain. Some schemes have been adjusting their accrual factor downwards a parametric measure of handling pension deficits. Since the define benefits schemes are private occupational schemes, it is difficult to have fixed accrual factor. The Accrual factor is flat and therefore benefits more of those in senior levels and those who stay longest within the organisation. Members who leave prior to retirement are disadvantaged.

2.2 What has RBA Done to Overcoming the Challenges

1. Driven by the twin mandate to protect the interest of members and to develop the industry, the Retirement Benefits Authority, drew the governments attention on the impact of taxation on retirement benefits savings. During the formative years of 2001 – 2005, several taxation changes were legislated. The tax band for taxing benefits at the time of retirement was widened nearly fourfold of the ordinary personal income tax³. This preferential tax band is for members who save for a continuous period of 15 years and more and those who retire at age 50 and above. Access of benefits outside of these provisions is punitive. In 2007 and further in 2008, a tax incentive was extended to pensioners aged 65 years and above. Pension earnings by the pensioners in this cohort are tax exempt.
2. The amount of lump sum entitlements at the time of retirement was all retirement benefits arrangements and designs was not only harmonised across all retirement benefits schemes but also increased to Kshs 480,000 from a minimum of Kshs 240,000 for defined benefits schemes and Kshs 360,000 for defined contributions. No retirement benefits member is disadvantaged in their choice of scheme.
3. In 2005, the rule on locking-in of retirement benefits was legislated. This was in line with recommendations of the pensioners and retiree primary survey conducted by RBA that revealed the sense of replacement income of retirees. It is following this revelation that the Authority recommended to the government to introduce the locking in of employer's portion of contribution for employees exiting employment before retirement age. According to the survey, retirees attributed their low pension income to the unblocked access to their pension savings when they changed jobs. The rule put a block on members of retirement benefits schemes accessing their accumulated benefits while working or upon leaving one employer to another as was the common practice in the private sector.
4. In 2006 a form of indexing of pension income was introduced for defined benefits schemes. The indexation amount is to be determined by the Actuary

³ See Appendix for Tax Schedule

every three years when these schemes undertake the periodic three year actuarial evaluation of the schemes. Indexation will ensure a revised pension income thus aligning the income with the cost of living hence improved replacement rate in retirement. Actual indexation is however dependent on the financial status of the sponsor.

5. In 2006, legislation that empowers retiring members to purchase annuity through a provider of choice was passed. The motive was to give retiring workers the discretion to secure annuities that provide highest interest return in the market as opposed to confining them to the limited choice of their trustees. Kenya's suffers from low annuity returns resulting in low income replacement rates. In 2008, an option of Income Draw Down from retirement benefits schemes was introduced as an alternative pathway of commuting accrued benefits into pension to that of annuity. The income draw down option or phased withdrawals has the effects of stimulating competition for the annuity market and enhancing income replacement rate for pensioners.

3.0 LITERATURE REVIEW

Income replacement rate is an important retirement planning index at national, institutional and individual levels. At national level retirement benefits programmes target two important objectives. The first is redistribution of income towards low-income pensioners and prevention of destitution in old age. The second is helping workers maintain living standards during retirement by replacing income from work at an adequate level. In the past many pension programmes in the developed countries pursued the first option with the government playing a centre role. In the present times, most countries are pursuing both goals in their overall pension policy with latter being emphasised more and the role of government being heavily supplemented by employer and individual efforts. On the overall, a good system of financial security at retirement is described as that which maintains retirees' standard of living and minimizes the risk of poverty among seniors (Quote). The extent to which the retirement income system is able to replace pre-retirement earnings is generally accepted as the best indicator of its adequacy.

At the individual level, all existing members of retirement benefits schemes or to those considering starting the journey to saving for retirement need to interrogate them on the whether the retirement saving commitments they are making are sufficient to provide comfortable retirement. This question needs to be answered using both objective and subjective indicators for life in retirement. Subjective indicators play the crucial role of influencing individual's perceptions that trigger saving behaviour (Dalen et al 2008). Individuals can achieve high replacement rates through established retirement benefits system.

Michel and Susan (2006) define income replacement rate as the required resources in retirement which can be measured in a simple or complex ways. In its simplicity form, it is some fixed fraction of pension income received in retirement relative to the income an individual received while in employment or to some poverty benchmark without factoring in many things. Income replacement rate becomes a complex measure when factors such as: tax application for different income distributions; work related expenses; time horizon or the survival curve of the

household; changing consumption profile with age; household's use of its increased leisure in retirement in ways that elevate or decrease spending; and returns to scale in consumption are accounted for in the calculation of incomes.

The sources of retirement income are many: social security transfers; self generated wealth from housing, and other investments; and remittances from children. In Kenya besides pension income, retirees eke their retirement income from engaging in activities such as consultancies, farming, financial investments and rental income which generate much higher incomes. This research is biased towards looking at income replacement rate from a combination of three complementary tiers of retirement benefits programmes net social transfers from the government social security schemes usually referred as the first tier, private pensions which are usually occupational based savings as the second tier and from personal investment plans which are the additional voluntary savings. Kenya does not have social security programmes.

In the regard, pension income is represents as the compounded value of the stream of pension payments that takes into account the amount of periodic contributions paid as a percentage of earnings (in the case of contributory scheme), earnings, the duration of membership, the eligible age of receiving pension, people's life expectancy and how pensions are adjusted after retirement to reflect growth in wages or prices.

Different countries have different replacement rates depending on the emphasis. The success behind the high retirement benefits replacement rates released in the developed countries is attributed to the existence of government supported social security; mandatory contributory retirement benefits program and the positive response of the citizens to make voluntary savings through alternative retirement benefits schemes. According to E. Whitehouse (2007), virtually all 24 high income OECD countries have targeted first tier target social security assistant programmes. Income Replacement from the first tier non funded schemes alone account between 19 percent to as high as 46 percent. Pension income from the first tier for 15 of these countries, account for 30 per cent and more of overall replacement rate.

In addition to the first tier, these countries have second tier earnings related mandatory contributory and funded retirement benefits schemes that provide

coverage to 90 percent and above of the population. The second tier schemes accounts for an additional income replacement. Lump sum withdrawals of accrued benefits upon retirement are discouraged. In a survey conducted in America in 1994, all retirees who were receiving annuity benefits in 1994 from a private pension plan replaced a median of 26% of reported pre-retirement earnings and Social Security replaced 31% of earnings. The combined replacement rates for those who received Social Security benefits as well as a private pension summed to 67%. (Quote). On the contrary, Kenya lacks government supported social security programmes for the old persons and retirees. Retirees depend only on privately retirement savings which for many years until the recent ten past years were poorly managed with investments whose returns were miserably low.

Unlike the many countries in Latin America and African, the second tier mandatory schemes in the OECD countries are defined benefits (DB) as opposed to being defined contributions (DC). Defined Benefits schemes are by design protected from the fluctuations of investment returns because the sponsor takes responsibility to offset the negative effects of poor investments performance. Members therefore have secured and guaranteed benefits.

These Defined Benefits scheme in many of OECD countries have generous accrual pension factor averaging approximately 1.5 percent. Spain has the highest at 3 percent accrual rate. However, the OECD accrual rates fall below those offered in Middle East and North Africa that average 2.4 percent. An accrual factor is used to compute the amount of pension a worker earns per year of work. There is a positive relationship between accrual factor and the accrued retirement benefits. The higher the accrual rate the higher the accrued benefits and the higher the replacement rate. Replacement Rate therefore is positively related to accrual factor. Accrual rates can be flat across earnings or may follow a different pattern. Accrual rates that are flat are the more common. In UK accrual rates are “U” shaped meaning that the rates vary across incomes. Rates are higher at lower incomes and similarly higher for those in higher incomes. The likely purpose is for encouraging early enrolment and late withdrawals. Accrual rates are progressive in USA and Nordic countries; the rates are high for low income workers and relatively low for the high income workers. In Luxembourg accrual rates increase with people with longer contribution histories. E. Whitehouse (2007).

Besides the accrual factor, the pension earnings used for the calculations of pension benefits determine the income replacement rate. Using average lifetime earnings yield lower earnings base than using the average final few years' earnings. Final years' of earning are regarded as time when workers earn their peak salaries. Countries using shorter earnings period and especially final year earnings, the derived replacement rates work out to be lower. When lifetime earnings are used, some countries valorise the earnings by adjusting past earnings to account for changes in living standards between the time when pension rights were earned and when they are claimed. Past earnings can be revalued in line with economy-wide earnings growth or in line with prices as Belgium, France, Korea, and Spain. Past earnings valorised with prices leads to substantially lower replacement rates than wage earnings because wages usually grow faster than prices. Price valorisation for a full-career worker could result into a 40 percent lower earnings than under wage earnings valorisation.

Ireland is considered among the OECD countries with the low replacement rates among of 30.6 percent replacement rate. This is because Ireland depends on State pension programmes that provide only basic, flat rate and targeted pensions. Analysis of the data generated from the Study of Health and Retirement in Europe (SHARE) by Gannon B, show that majority 68 percent of the males and 52 percent of retirees are on State Pension either the contributory or non contributory programmes. Only an additional 40% of male and 26 percent of female retirees draw additional pension from occupational pension programmes. State Pension is therefore largely the pathway to retirement.

5.0 DATA ANALYSIS AND METHODOLOGY

5.1 Data

The data used in this Research was obtained from the Pensioners and Retiree survey conducted by Retirement Benefits Authority in 2008. The data was cleaned and all entries that were incomplete or inconsistent in one form or other were deleted. From a raw data of 240 individual entries the data used consisted of only 165. All entries that did not have employee contributions, lumpsum amounts, pension income and/or monthly income were deleted.

Whenever data was given within a range, the maximum value in the range was used. The purpose was to largest possible results. The writer believes the trend would be similar had either the average or minimum values been used.

5.2 Methodology

The methodology used in this research borrows heavily but not exactly, from the one modelled by Edward Whitehouse in 2007 when analysing the Income Replacement rates or entitlements for 53 countries in the OECD, Middle East, Latin America and North Africa. Edward Whitehouse calculated pension income replacement rate or entitlements as the ratio of pension benefits and income earnings. Pension income was used as the numerator and income earnings as the base. Whitehouse modelled three different levels of measuring income replacement ratios based on the treatment applied to the wage earnings:

- 1) Gross Income Replacement Rate: Edward took into account the total income earnings with no deductions netted out of the earnings;
- 2) Gross Relative Replacement Rate: uses gross income net of remitted benefits contributions and
- 3) Net relative pension level uses the income net of monthly contributions and taxes paid and pension earnings net of taxes.

Using net income earnings results at average earnings yielded higher replacement values than gross earnings. On average across all OECD countries, the use of net

income results into significant 22% larger than gross replacement rates. Income earnings used was either lifetime average earnings for full time career workers⁴ or shorter averaged earnings such as the final five years.

Use of average lifetime earnings yield different results from using shorter period of earnings. The product of using a short earnings period in particular final years of work results in lower replacement rates.

In order to apply Whitehouse model several assumptions were made to derive key parameters such as income and pension data. These include:

- 1) Total accrued benefits at the time of retirement was derived by multiplying the lump-sum amounts by three on the assumption that lumpsum amounts equated to one third of the total benefits accrued through the period of savings for retirement.
- 2) The last salary received prior to retirement was assumed to be fully adjusted wage or valorised earnings and assumed to be the monthly salary amount received through the entire period of working life. This is debatable and less precise. This is necessitated by the lack of salary data at entry point.
- 3) Total earnings were derived by multiplying the period of saving for retirement by the monthly gross earnings. The total years of saving for retirement were converted into months.
- 4) All the retirees were assumed to members of the National Social Security Fund (NSSF) who remitted an equivalent of Kshs 200 per month for the entire period they were in salaried employment. It is assumed that employees joined the NSSF immediately on employment.
- 5) Employer made matching contributions to the NSSF of Kshs 200 per month
- 6) The NSSF contributions were compounded at the rate of 2.5 percent per annum for the years of salaried employment.
- 7) The assumed amount of contributions was calculated using the rate of employee contributions. This amount was netted out from the gross income to obtain net income.
- 8) It is assumed that there are no changes in the taxation rates throughout the employment period.

⁴ A full time career worker must have worked for uninterrupted 40 years of work.

This research has calculated two sets of replacement rates. The first set uses the monthly pension income and monthly earnings to calculate three levels of replacement rates. The second set uses aggregated lifetime earnings for the number of years worked and aggregated lifetime accrued benefits for the period of contribution as the parameters to calculate the three levels of replacement rates.

The reason for using aggregated lifetime amounts of pension and earnings are: one third of benefits are commuted in lumpsums and the rest two thirds are commuted into pension. Using monthly pension income omits the one third lumpsum amount already commuted. In addition benefits from the NSSF are also commuted as one lumpsum amount which would be worth considering. Again, for lack of an assumed annuity rate to convert the aggregate figures into monthly pension. The respondents from provident funds are captured when lifetime figures are used. Entries relating to provident fund were removed when calculating monthly replacement rate. The replacement rate is taken as the average of the 165 entries.

In this research, benefits included the NSSF contributions of both the employer and employee. This had not been included in the earlier calculations for retirement age. The NSSF contributions were compounded at the rate of 2.5 percent for entire period of salaried employment.

Calculations of net amounts took into account the portion of earnings and pension that are taxed exempt. The tax exempted amounts were first netted out from the gross before the appropriate tax was applied.

5.3 Research Findings

From the data set used, it follows that the longer the period of retirement savings, the higher the contribution rates, the more the benefits for individual members.

From the analysis, two sets of replacement rate gave different results as shown below. Use of monthly earnings and monthly pension income data yielded very high replacement rates. Individual replacement rates show that there are a number of retirees with 100 percent and more replacement rate. This raises doubt on the income and pension information provided by the respondents. Salary earnings were given as similar amounts to the pension earnings. The net replacement rate using

the monthly parameters incidentally yielded the lowest return which is supposed to yield the highest of the three. This shows some inconsistencies.

	Gross Monthly Replacement Rate	Monthly Relative Replacement Rate	Monthly Net Replacement Rate
Average	0.53 (53%)	0.59 (59%)	0.42 (42%)
	Overall Gross Replacement Rate	Overall Relative Replacement Rate	Overall Net Replacement Rate
Average	0.32 (32%)	0.36 (36%)	0.38 (38%)

The use of aggregates lifetime numbers gave a more conservative replacement rate results than the use of monthly figures. Using gross aggregated lifetime incomes yielded the lowest replacement rate of 32 percent while the aggregated net replacement rate resulted in 38 percent replacement rate.

On comparison, the two sets of data give very different results. It is therefore fairly difficult to decide which replacement rate to go for because of the used data which poses great limitation. The total lifetime salary used assumed that the individuals earned the same salary as their final salary for all through their years of salaried employment. This approximated due to lack of data on entry salary and salary growth rate. This yielded significantly large denominator of earnings.

It is also difficult to make comparison with the previous analysed findings of Kenya's replacement rate because the methodologies used and treatment of earnings data are different. The previous study did not include the accrued benefits from NSSF.

Given a choice, this research would go by all three averaged overall lifetime replacement rate as shown in the second row. This is because they are more conservative and they take into account the total accrued benefits from Occupational Schemes and NSSF as well as the total lifetime accrued benefits.

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Calculation of comprehensive replacement rate requires good data. From this study, net relative income replacement rate are more conservative. They also tend to give the close to reality outlook of the income replacement rate that takes into consideration income disposable of pensioners. The use of aggregate lump sum amounts gives a more conservative rate than use of the monthly data of pension and salary incomes. Ideally since the amount of monthly pension is less the commuted lump-sum, the replacement rate should have been much lower than the replacement rate derived using the aggregated figures. Partly this could be attributed by the fact that the data showed equal amount for both pension and salary incomes. With this irony, the choice of replacement rate using the aggregated data is more preferred.

Net replacement rates tend to be distributive because of the taxation element. Net replacement rate tends to be higher among low income earners compared to higher income earners. Replacement rate depend on salary amounts, contribution rates, whether employer is contributing and years of interrupted contributions. Employer contributions cannot be taken lightly because they constitute a big proportion of total benefits both from NSSF and occupational schemes.

High replacement rates in the developed countries are attributed to long years of savings, sound first tier schemes that provide sizeable income in retirement, high accrual factors that are not necessarily flat, disallowing lump – sum withdrawals and high coverage.

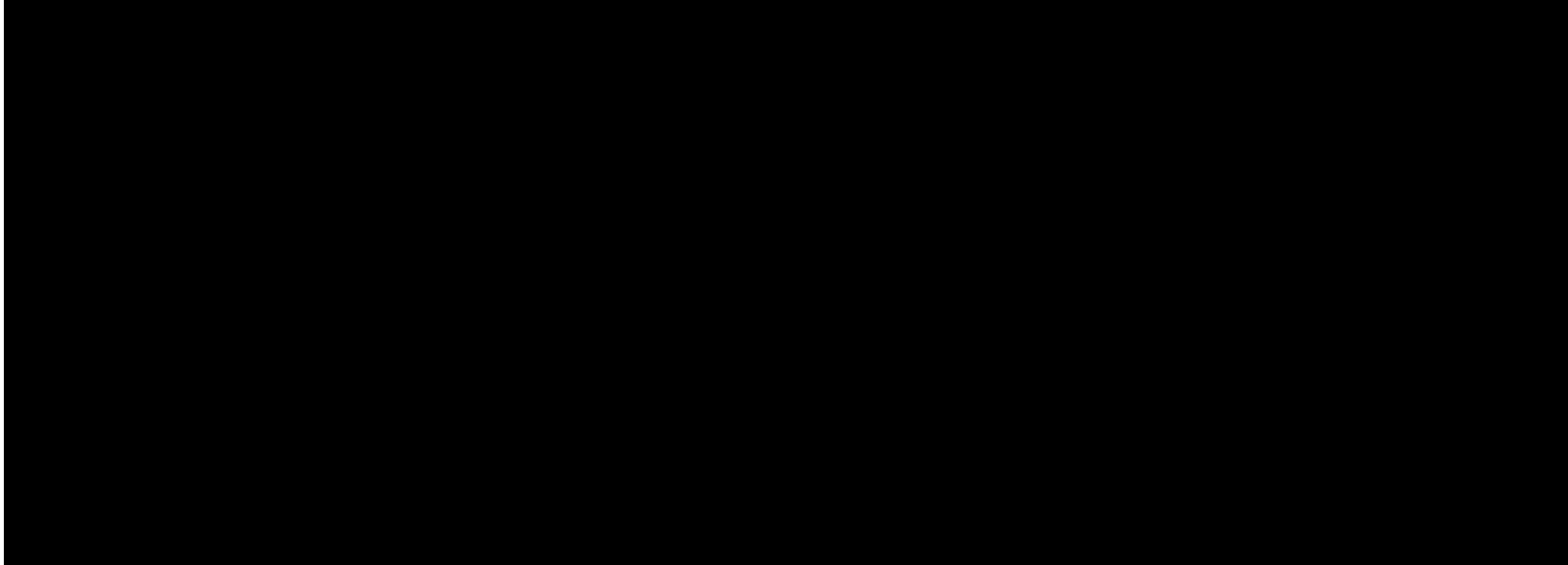
6.2 Recommendations

1. Collection of appropriate data for calculating replacement rate
2. Introduction of a form first tier mandatory schemes (zero pillars) that targets income redistribution among pensioners.
3. More Incentives that encourage longer period of savings
4. Increasing coverage through legislation that mandates membership to retirement benefits arrangement
5. Educating retirement benefit scheme members on the benefits and importance of preserving their retirement benefits for a long period of time

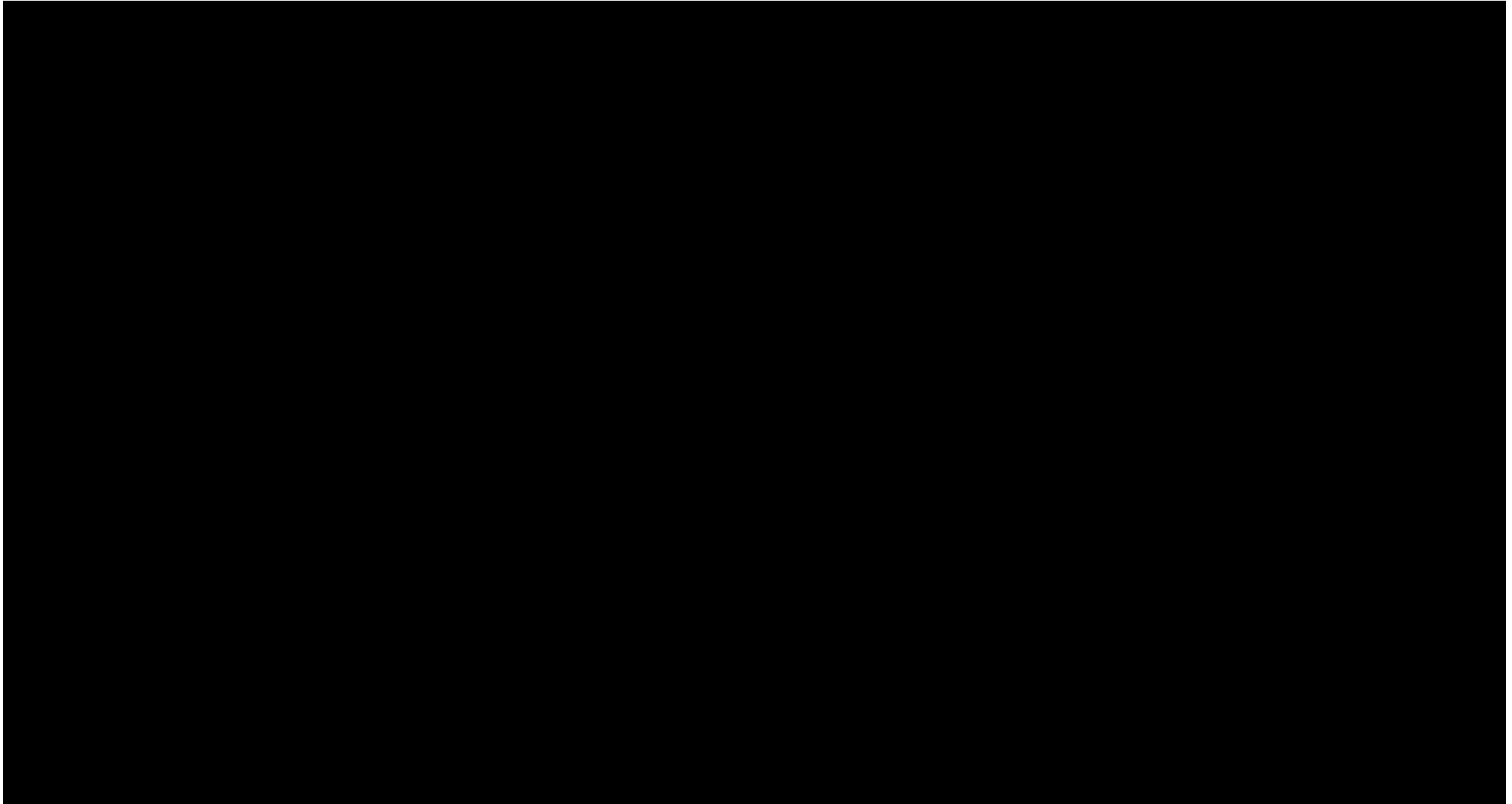
6. Educating Kenyans on the importance of starting early to save for retirement.
7. Increasing contribution amount ie lobbying for increase of tax - exempt contributions to encourage members save for their retirement
8. Rethinking commutation of lump - sum amounts in retirement from members in pension schemes.

7.0 APPENDICES

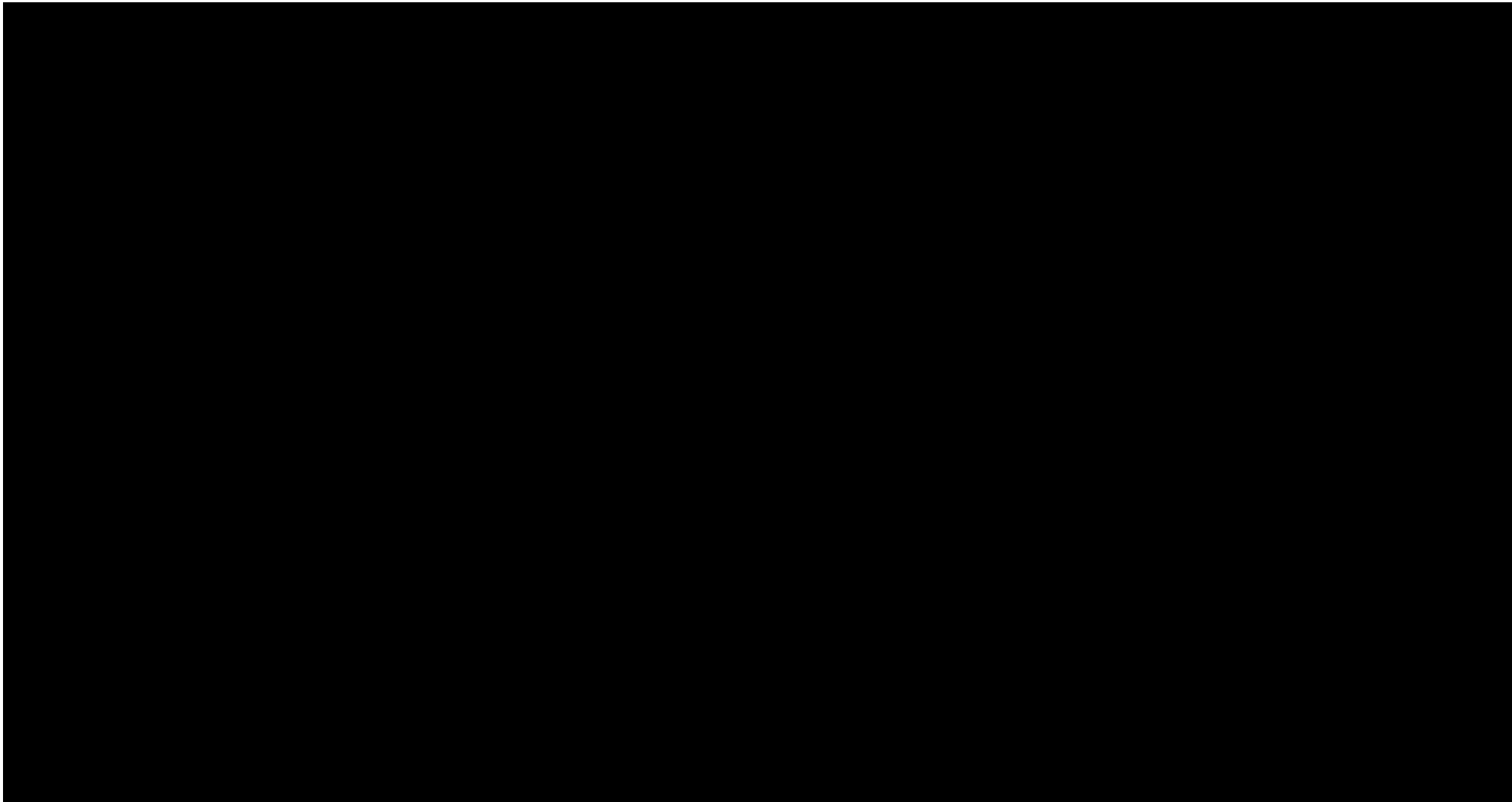
7.1 Appendix 1: Tax Schedule for Retirement Benefits Savings



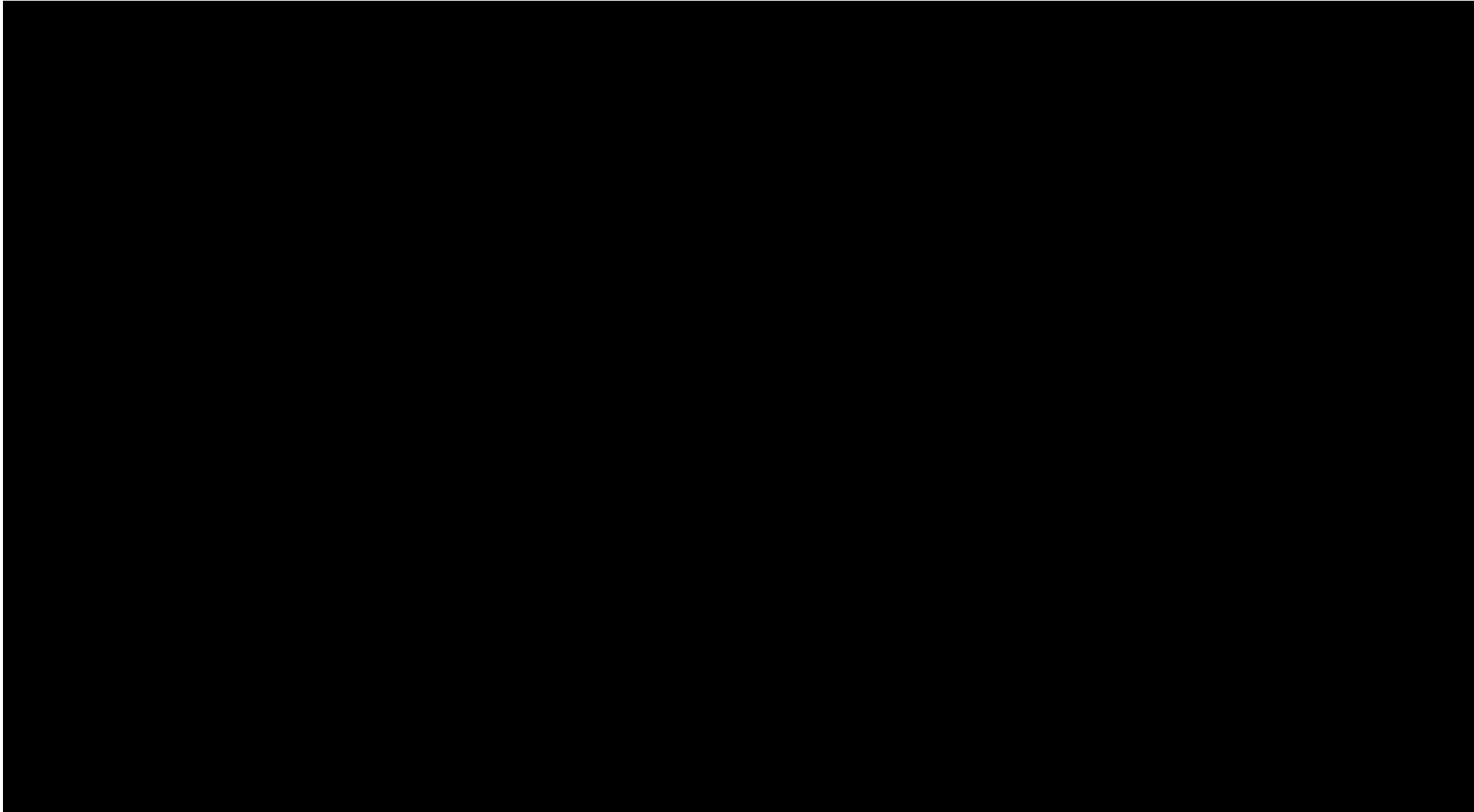
7.2 Appendix 2: Raw Data



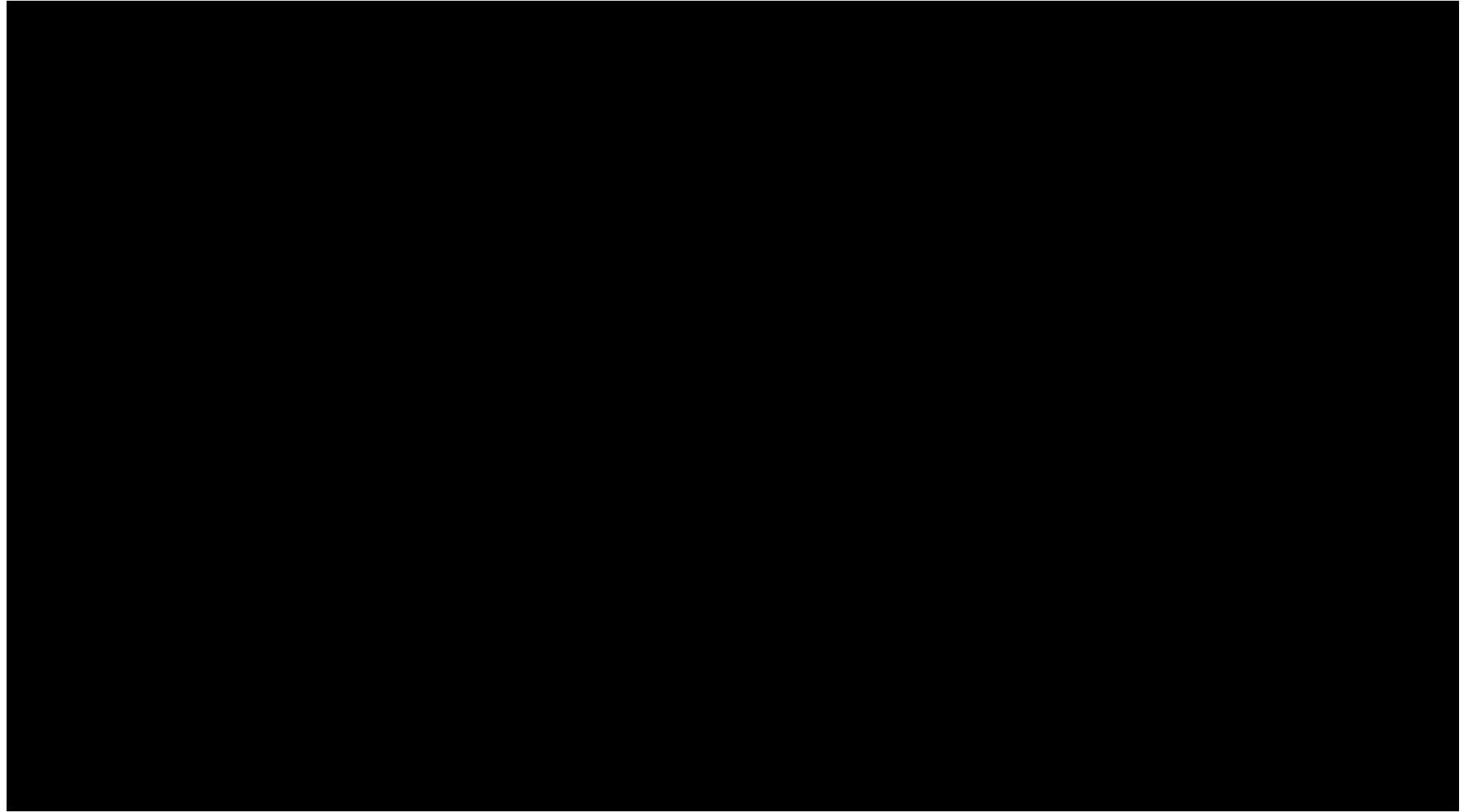
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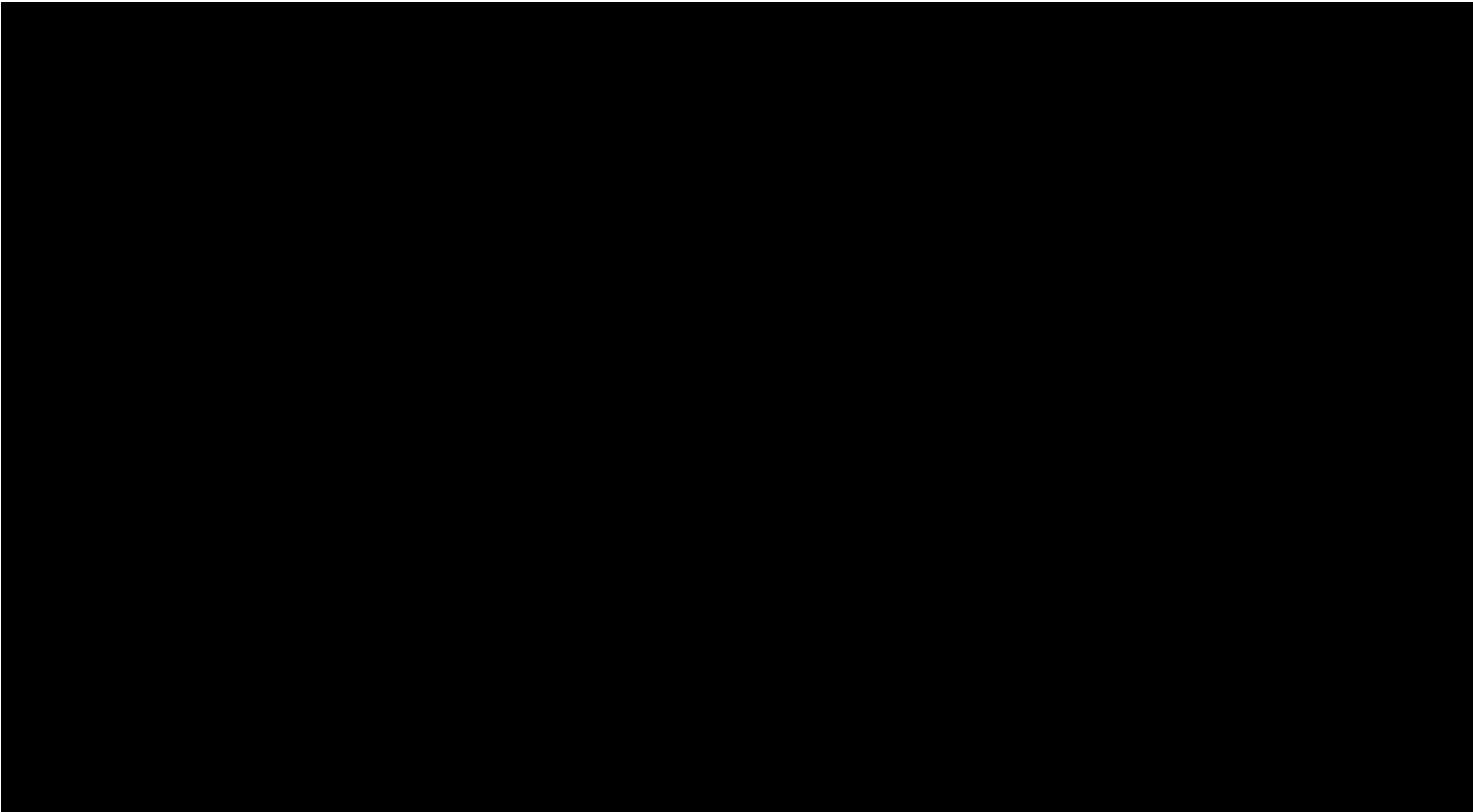
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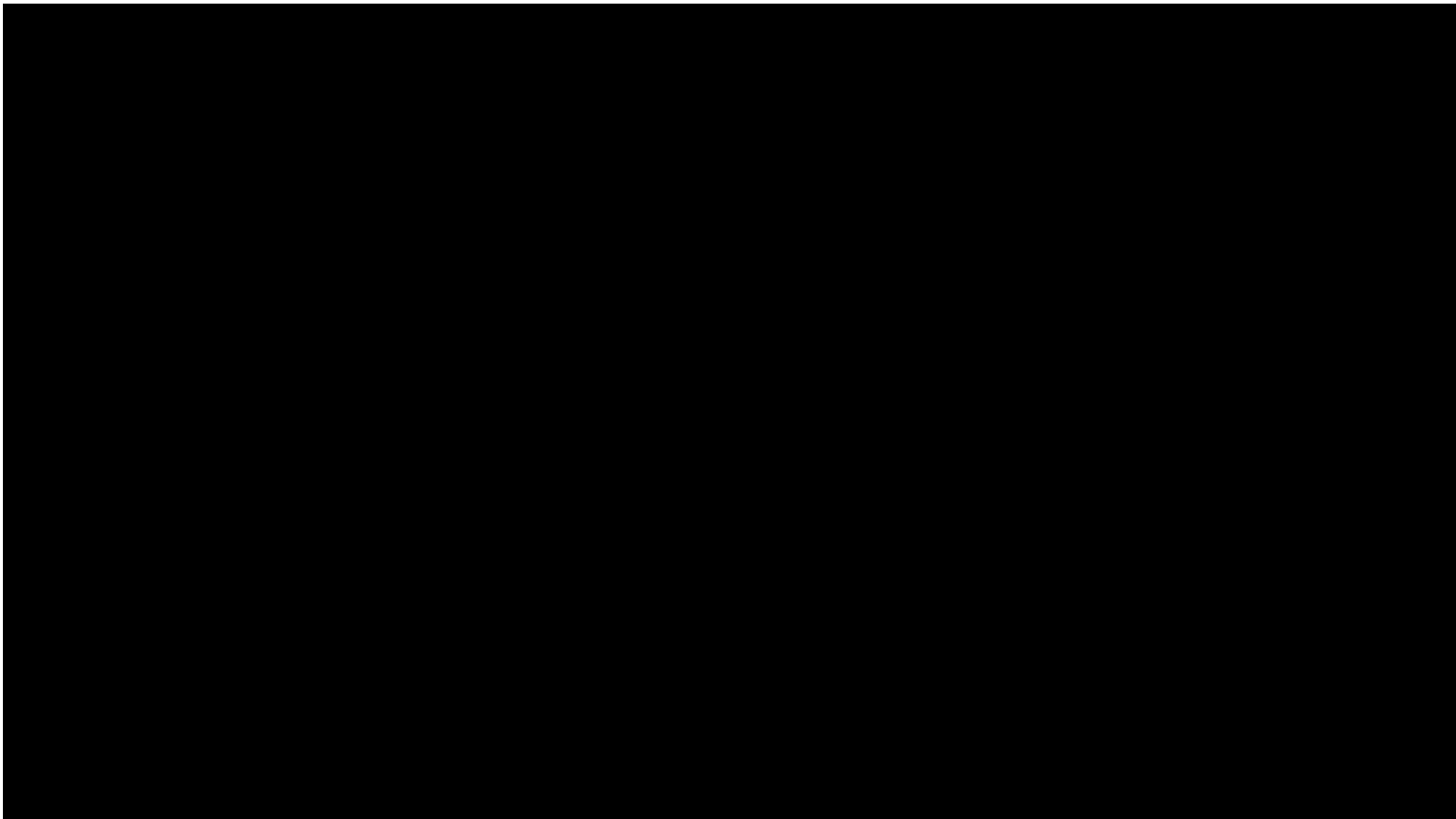
Appendix 2: Raw Data Continued



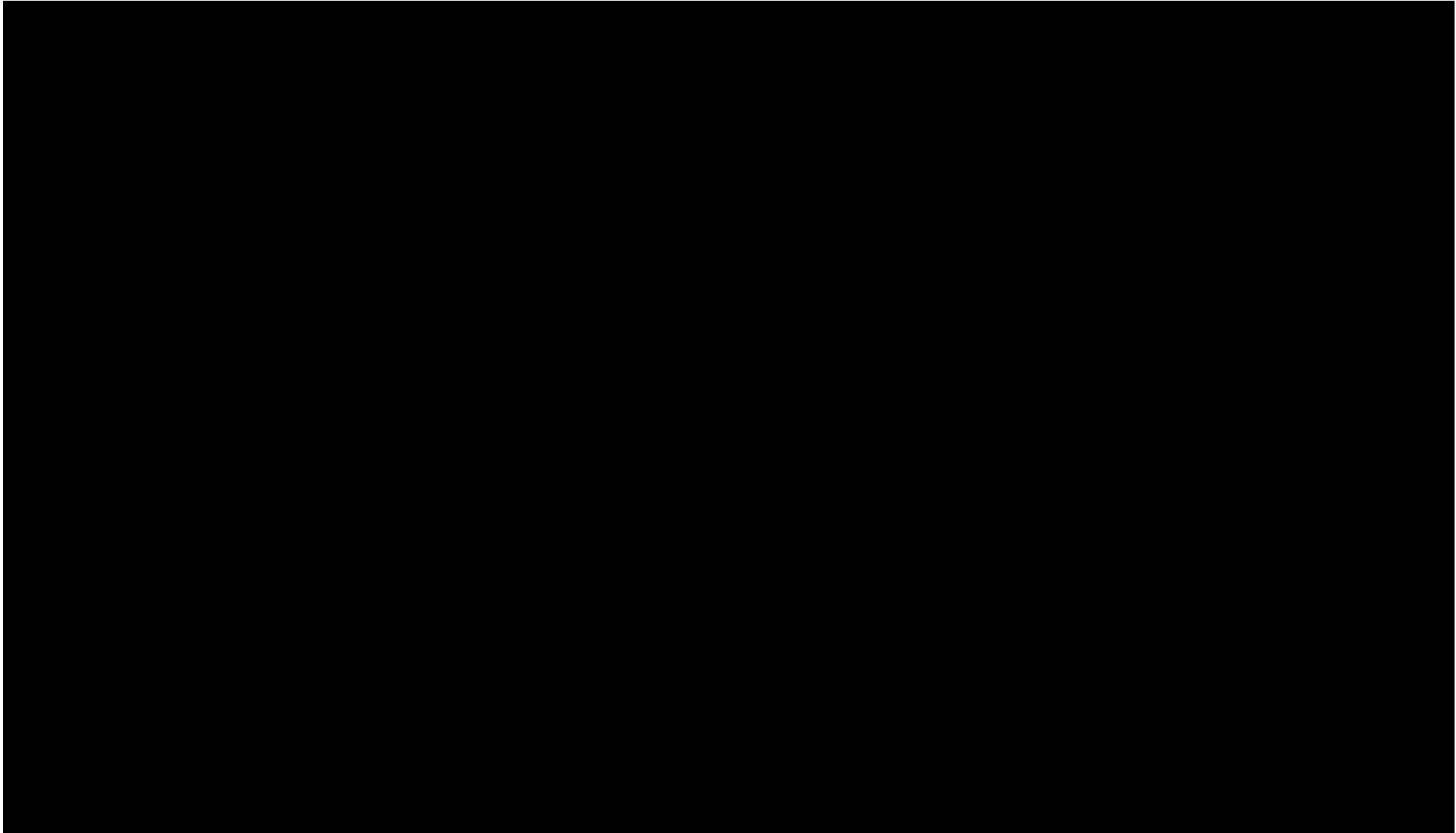
Appendix 2: Raw Data Continued



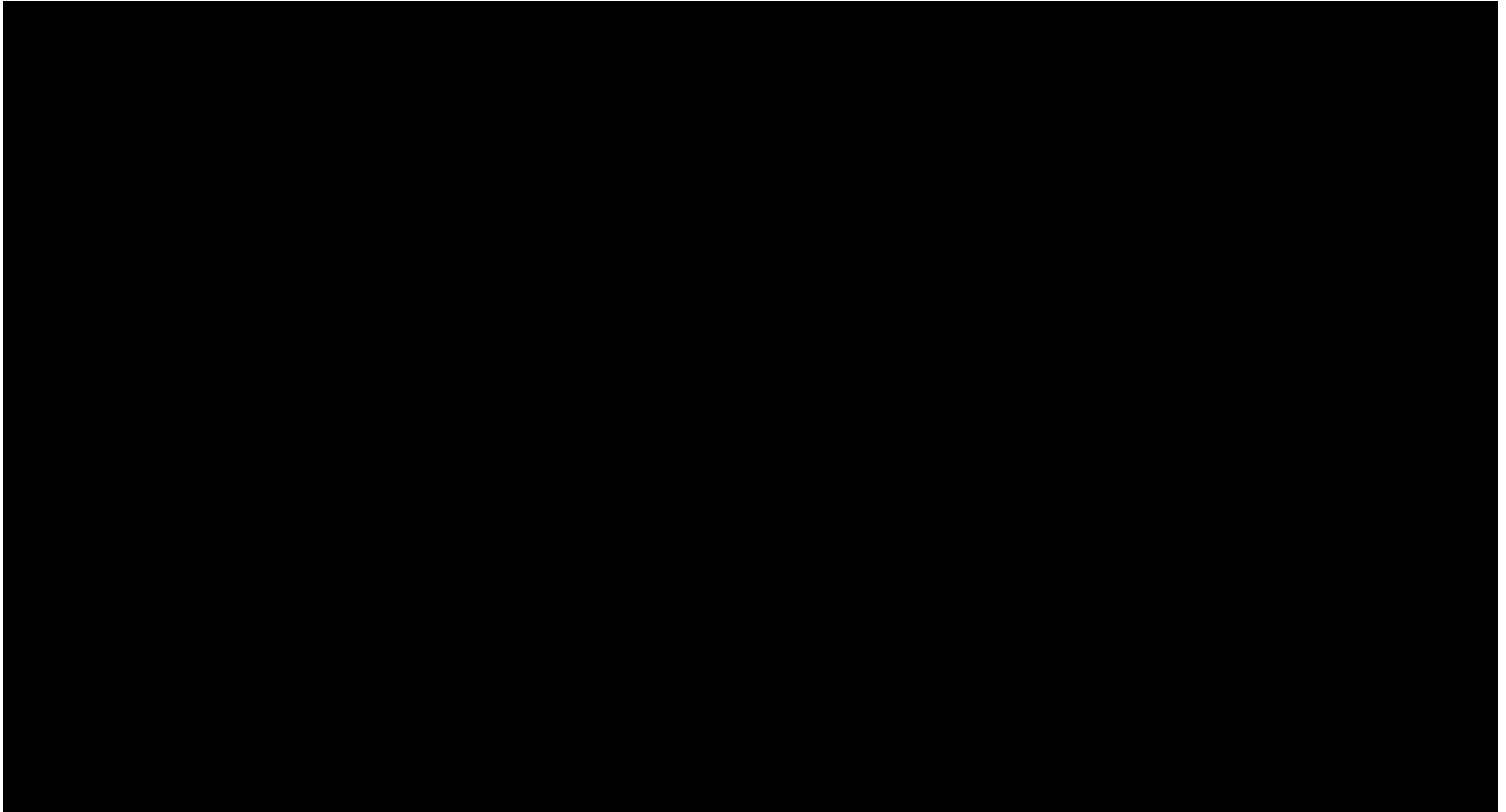
7.3 Appendix 3: Monthly Pension Replacement Rate



Appendix 3: Pension Replacement Rate Continued



Appendix Pension 3: Replacement Rate Continued



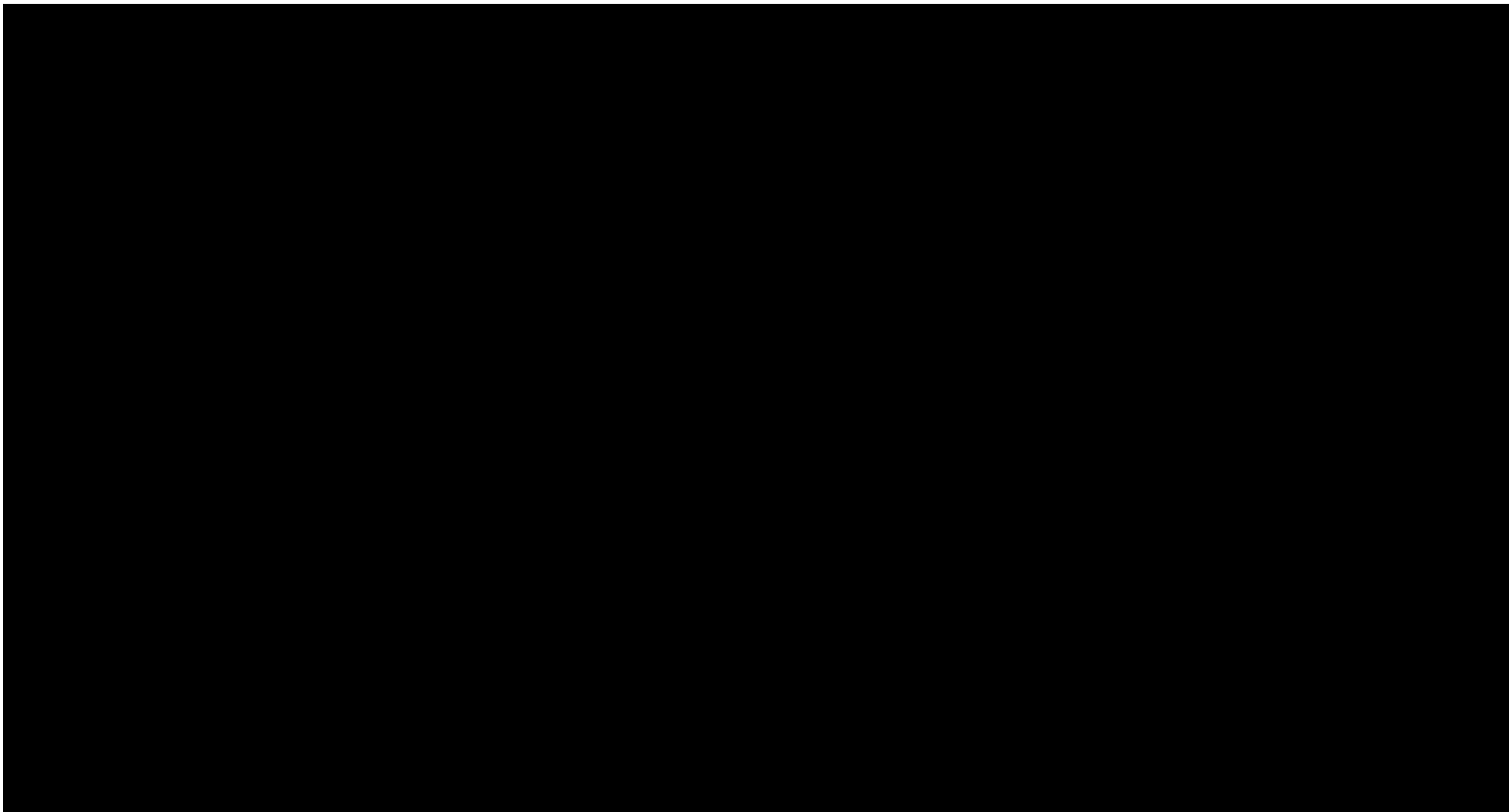
Appendix Pension 3: Replacement Rate Continued

Pension Income Amount	Net Pension Income	Years of Salaried Employment	Months of Salaried Employment	Years of saving for retirement	Months of Saving for Retirement	Employee Contribution	Amount of Monthly Contributions in Kshs	NSSF Monthly Contributions	Gross Monthly Income	Monthly Relative Income	Net Income	Gross Monthly Replacement Rate	Monthly Relative Replacement Rate	Monthly Net Replacement Rate
7,900.00	7,900.00	20	240	20	240	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	30	360	30	360	10	5,000.00	200.00	50,000.00	44,800.00	41,320.00	0.158	0.176339	0.191191
7,900.00	7,900.00	35	420	30	360	10	5,000.00	200.00	50,000.00	44,800.00	41,320.00	0.158	0.176339	0.191191
7,900.00	7,900.00	35	420	20	240	12.5	2,500.00	200.00	20,000.00	17,300.00	16,570.00	0.395	0.456647	0.476765
7,900.00	7,900.00	35	420	20	240	14.5	7,250.00	200.00	50,000.00	42,550.00	39,295.00	0.158	0.185664	0.201043
7,900.00	7,900.00	25	300	25	300	10	2,000.00	200.00	20,000.00	17,800.00	17,020.00	0.395	0.44382	0.46416
7,900.00	7,900.00	35	420	20	240	12.5	2,500.00	200.00	20,000.00	17,300.00	16,570.00	0.395	0.456647	0.476765
7,900.00	7,900.00	20	240	20	240	10	1,000.00	200.00	10,000.00	8,800.00	8,800.00	0.79	0.897727	0.897727
7,900.00	7,900.00	40	480	20	240	10	5,000.00	200.00	50,000.00	44,800.00	41,320.00	0.158	0.176339	0.191191
7,900.00	7,900.00	35	420	15	180	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	35	420	5	60	5	2,500.00	200.00	50,000.00	47,300.00	43,570.00	0.158	0.167019	0.181317
7,900.00	7,900.00	20	240	20	240	12.5	6,250.00	200.00	50,000.00	43,550.00	40,195.00	0.158	0.181401	0.196542
7,900.00	7,900.00	25	300	25	300	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	35	420	35	420	5	2,500.00	200.00	50,000.00	47,300.00	43,570.00	0.158	0.167019	0.181317
7,900.00	7,900.00	30	360	30	360	14.5	1,450.00	200.00	10,000.00	8,350.00	8,350.00	0.79	0.946108	0.946108
7,900.00	7,900.00	35	420	35	420	7.5	3,750.00	200.00	50,000.00	46,050.00	42,445.00	0.158	0.171553	0.186123
7,900.00	7,900.00	35	420	15	180	12.5	2,500.00	200.00	20,000.00	17,300.00	16,570.00	0.395	0.456647	0.476765
7,900.00	7,900.00	40	480	5	60	7.5	1,500.00	200.00	20,000.00	18,300.00	17,470.00	0.395	0.431694	0.452204
7,900.00	7,900.00	25	300	15	180	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	35	420	25	300	5	2,500.00	200.00	50,000.00	47,300.00	43,570.00	0.158	0.167019	0.181317
7,900.00	7,900.00	30	360	15	180	5	5,000.00	200.00	100,000.00	94,800.00	86,320.00	0.079	0.083333	0.09152
7,900.00	7,900.00	30	360	20	240	5	5,000.00	200.00	100,000.00	94,800.00	86,320.00	0.079	0.083333	0.09152
7,900.00	7,900.00	30	360	30	360	5	2,500.00	200.00	50,000.00	47,300.00	43,570.00	0.158	0.167019	0.181317
7,900.00	7,900.00	30	360	5	60	5	1,000.00	200.00	20,000.00	18,800.00	17,920.00	0.395	0.420213	0.440848
7,900.00	7,900.00	35	420	10	120	5	1,000.00	200.00	20,000.00	18,800.00	17,920.00	0.395	0.420213	0.440848
7,900.00	7,900.00	40	480	40	480	5	2,500.00	200.00	50,000.00	47,300.00	43,570.00	0.158	0.167019	0.181317
7,900.00	7,900.00	35	420	25	300	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	30	360	30	360	5	2,500.00	200.00	50,000.00	47,300.00	43,570.00	0.158	0.167019	0.181317
7,900.00	7,900.00	25	300	10	120	12.5	1,250.00	200.00	10,000.00	8,550.00	8,550.00	0.79	0.923977	0.923977

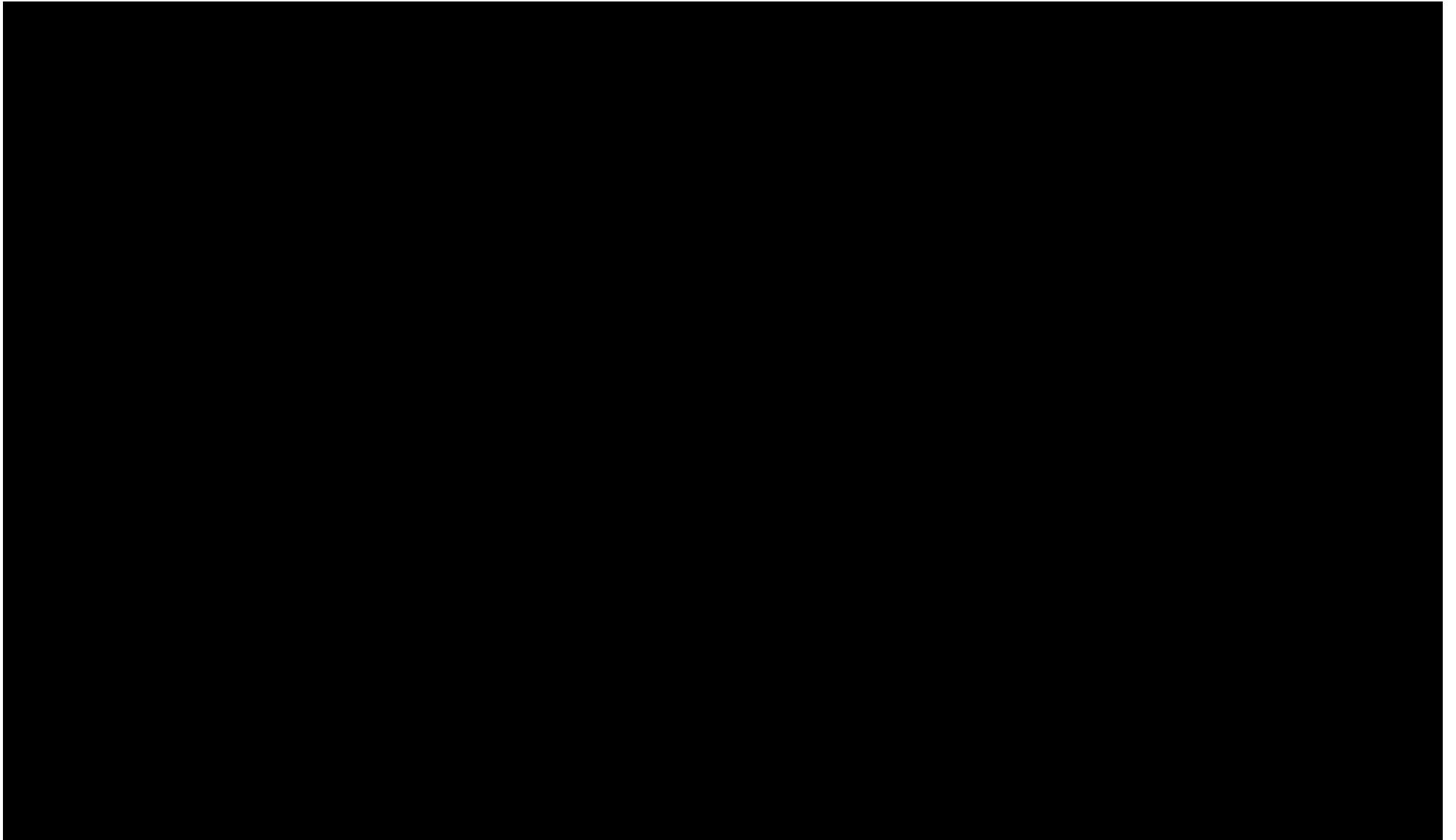
Appendix Pension 3: Replacement Rate Continued

Pension Income Amount	Net Pension Income	Years of Salaried Employment	Months of Salaried Employment	Years of saving for retirement	Months of Saving for Retirement	Employee Contribution	Amount of Monthly Contributions in Kshs	NSSF Monthly Contributions	Gross Monthly Income	Monthly Relative Income	Net Income	Gross Monthly Replacement Rate	Monthly Relative Replacement Rate	Monthly Net Replacement Rate
7,900.00	7,900.00	35	420	20	240	7.5	1,500.00	200.00	20,000.00	18,300.00	17,470.00	0.395	0.431694	0.452204
7,900.00	7,900.00	35	420	20	240	12.5	2,500.00	200.00	20,000.00	17,300.00	16,570.00	0.395	0.456647	0.476765
7,900.00	7,900.00	30	360	30	360	7.5	1,500.00	200.00	20,000.00	18,300.00	17,470.00	0.395	0.431694	0.452204
7,900.00	7,900.00	10	120	10	120	12.5	2,500.00	200.00	20,000.00	17,300.00	16,570.00	0.395	0.456647	0.476765
7,900.00	7,900.00	40	480	30	360	10	5,000.00	200.00	50,000.00	44,800.00	41,320.00	0.158	0.176339	0.191191
7,900.00	7,900.00	35	420	20	240	5	1,000.00	200.00	20,000.00	18,800.00	17,920.00	0.395	0.420213	0.440848
7,900.00	7,900.00	30	360	25	300	10	2,000.00	200.00	20,000.00	17,800.00	17,020.00	0.395	0.44382	0.46416
7,900.00	7,900.00	40	480	25	300	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	30	360	30	360	5	1,000.00	200.00	20,000.00	18,800.00	17,920.00	0.395	0.420213	0.440848
7,900.00	7,900.00	15	180	15	180	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	35	420	35	420	5	1,000.00	200.00	20,000.00	18,800.00	17,920.00	0.395	0.420213	0.440848
7,900.00	7,900.00	20	240	20	240	10	2,000.00	200.00	20,000.00	17,800.00	17,020.00	0.395	0.44382	0.46416
7,900.00	7,900.00	35	420	35	420	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	30	360	30	360	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	30	360	20	240	10	5,000.00	200.00	50,000.00	44,800.00	41,320.00	0.158	0.176339	0.191191
7,900.00	7,900.00	30	360	20	240	7.5	1,500.00	200.00	20,000.00	18,300.00	17,470.00	0.395	0.431694	0.452204
7,900.00	7,900.00	25	300	20	240	7.5	1,500.00	200.00	20,000.00	18,300.00	17,470.00	0.395	0.431694	0.452204
7,900.00	7,900.00	30	360	20	240	14.5	2,900.00	200.00	20,000.00	16,900.00	16,210.00	0.395	0.467456	0.487353
7,900.00	7,900.00	30	360	30	360	12.5	6,250.00	200.00	50,000.00	43,550.00	40,195.00	0.158	0.181401	0.196542
Average Replacement												0.531626	0.593231	0.422574

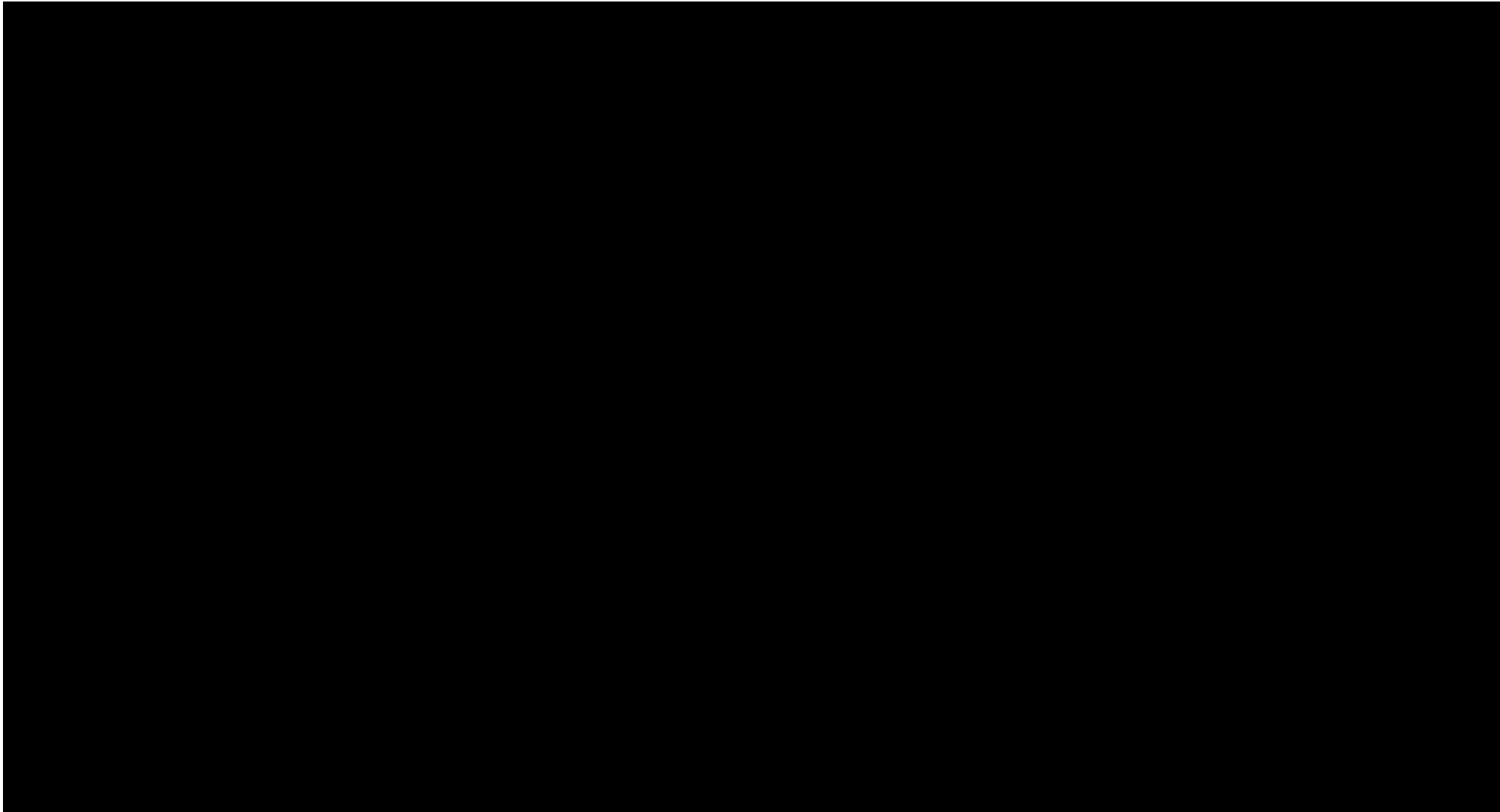
7.4 Appendix 4: Lumpsum Replacement Rate



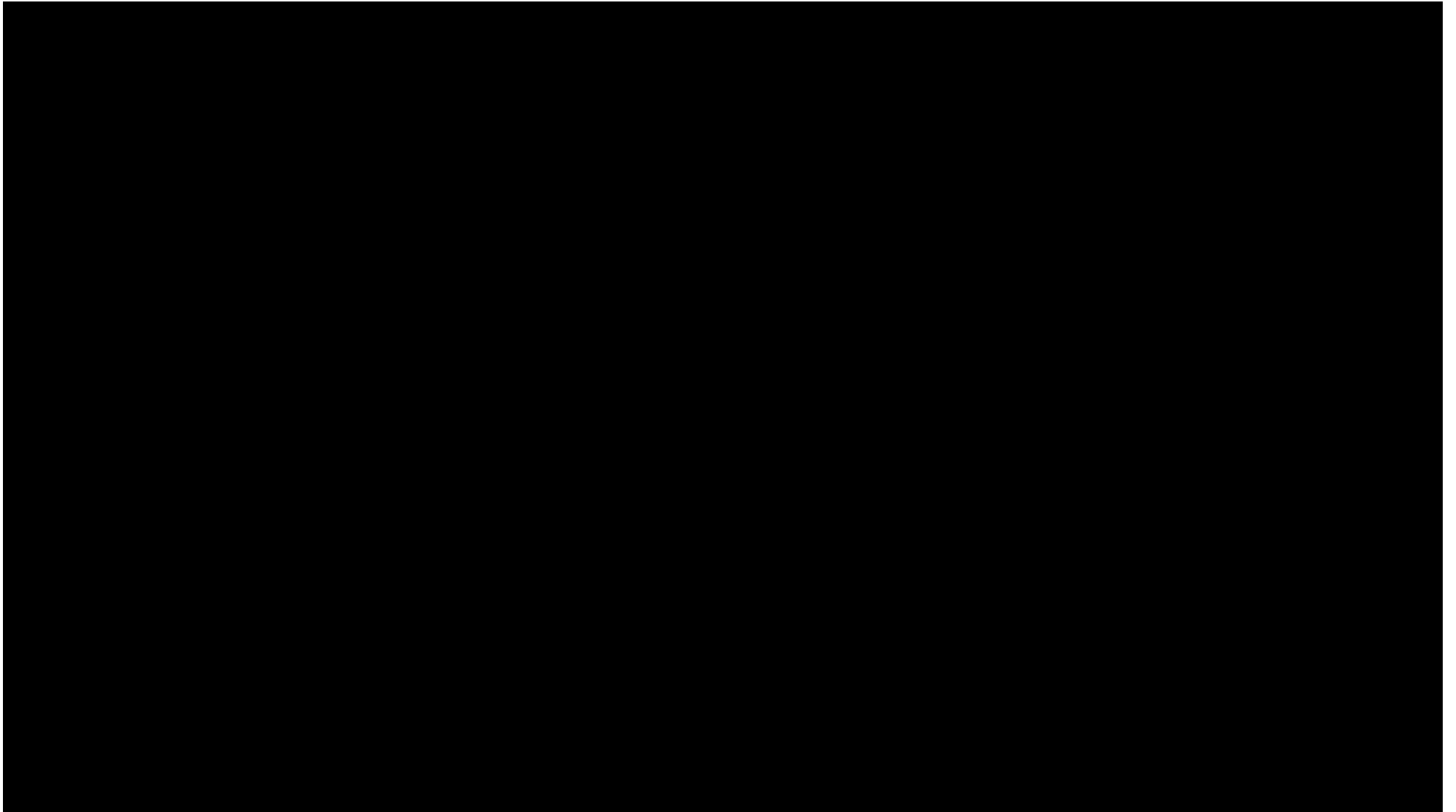
Appendix 4: Lumpsum Replacement Rate Continued



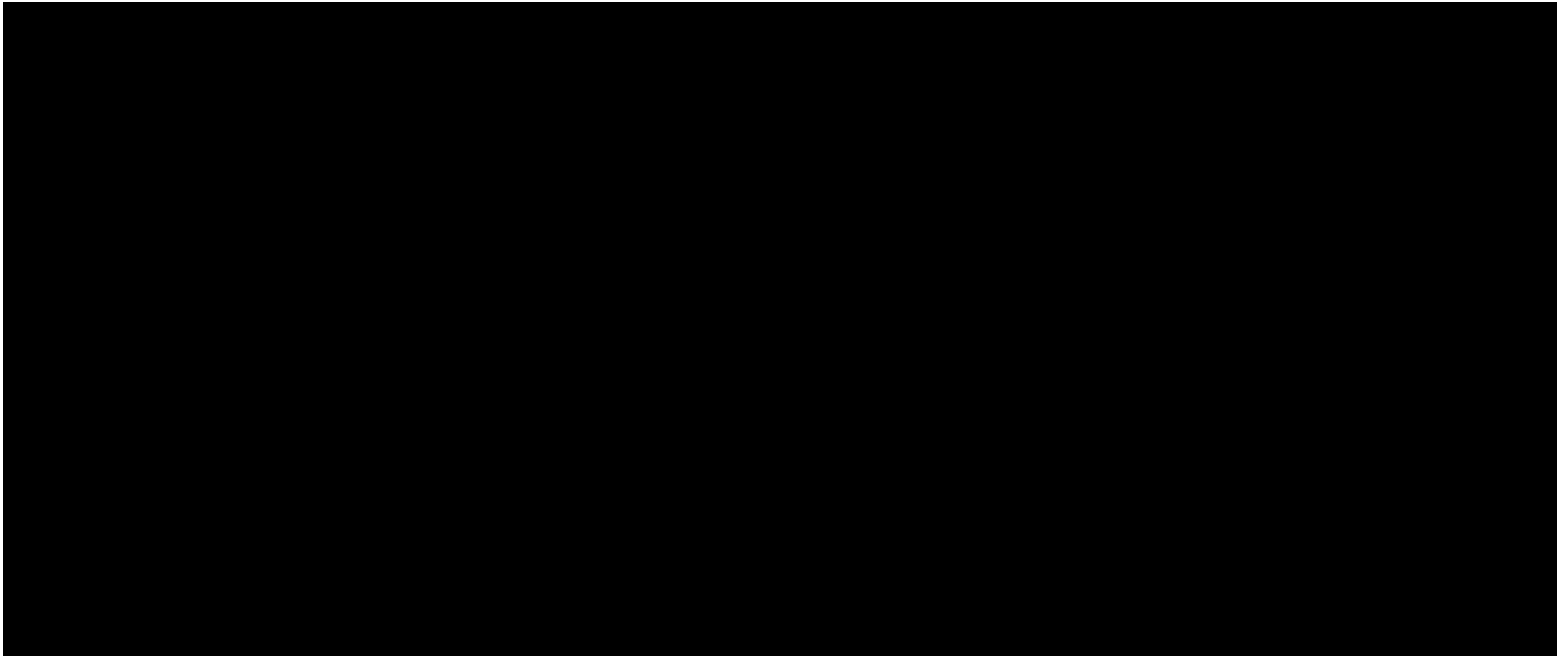
Appendix 4: Lumpsum Replacement Rate Continued



Appendix 4: Lumpsum Replacement Rate Continued



Appendix 4: Lumpsum Replacement Rate Continued



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