WILLINGNESS TO PAY FOR SOCIAL HEALTH INSURANCE IN ZAMBIA – A TWO-STAGE REGRESSION APPROACH

By

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A dissertation submitted to the Health Economics Unit, University of Cape Town, in partial fulfilment of the requirements for the award of a Master of Arts Degree in Economics

Faculty of the Humanities
University of Cape Town
(August 2002)

TERMS OF REFERENCE

This paper was prepared for the Health Economics Unit, University of Cape Town, in partial fulfilment of the requirements for the award of an MA degree in Economics.

I attest to the fact that this work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signed by candidate

Signature:_____ Date: August 2002

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This research paper has been submitted for examination with my approval as the University Supervisor

Signature:_ Date: February 2003

STEVE THOMAS

ACKNOWLEDGEMENTS

The path towards the completion of this paper has been challenging and I am greatly indebted to a number of individuals for being a present help throughout this exercise.

My supervisor, Steve Thomas, deserves special mention for having encouraged my inclination towards a more quantitative study and thereafter, for the numerous suggestions and corrections during the write up. Thanks Steve, I could not have done it without you.

May I express my gratitude to the lecturers in the School of Economics and the Health Economics Unit at UCT for the invaluable knowledge imparted into me all the way through my studies. Special thanks go to Prof. Murray Leibbrandt, Malcolm Kesswell and Okore Okafor for the valuable suggestions offered to me during the econometric-modelling stage of my study.

A special thank you is extended to the Department of Economics at the University of Zambia (UNZA) and the Swedish International Development Agency (SIDA) for financing my studies through a scholarship. At UNZA, I am grateful to Dr. Ngenda Mwikisa for having inspired and cultivated my interest in Health Economics.

To Kennedy Habasimbi and Pumulo Mayungo, thanks guys for the fine job you did in collecting data. To my classmates with whom I could 'mourn' and identify with as the pressures of school became almost unbearable, I am grateful that you were there. And to Basila, thank you for being a welcome diversion from my books.

I will forever be indebted to my Dad and Mum. How can I ever repay your contribution to what I am today, for instilling a sense of hard work in me from a tender age? And to the rest of my family, I am grateful for your unwavering support in my life.

And most importantly, to my father in Heaven: I have learnt that that you may not always reveal the purpose of your ways, but your ways are never without purpose. Not only do I believe that you can, I know, without a flicker of doubt that you will.

KAAMBWA BILLINGSLEY CHIMUKA

ABSTRACT

Objectives: Among the key objectives of health financing reforms in Zambia has been the need to generate additional financial resources and foster partnerships between users and providers. The choice of the financing mechanism(s) therefore becomes critical in ensuring that objectives in the health sector are met. SHI is one financing method that can help meet the objectives of the health sector. This feasibility study set out to answer the question of whether or not the Zambian formal sector was prepared to endorse and pay for SHI in the country.

Methodology and Data: Because of limited funds, the survey was restricted to 293 formal employees and 37 employers in Lusaka, Zambia. Data were obtained through questionnaires, interviews and a literature review. The study combined both qualitative and quantitative methods to analyse the data. A two-stage regression approach was used to expose links between WTP for SHI and the maximum WTP amount on one hand and various explanatory factors on the other hand for *employees*.

Results: 16 factors (some of these were just categories of the same variable) were found to significantly influence respondents' WTP for SHI. Positive relationships were found between WTP on one hand and not having a prepayment scheme, the type of services covered by a prepayment scheme, the quality of health care in public and private hospitals and a perception of efficient services in *private* hospitals. Other variables with a positive influence were the type of services covered by SHI and whom SHI was to cover.

Negative relationships were found between WTP and the duration spent in current employment, a perception of efficient services in *public* hospitals, as well as affordability of publicly provided health care services.

20 variables (some were categories again) were significant in influencing the MAXWTP amount. Those that had a positive relationship were residential and marital status, level of education, employee's salary and the type of services covered by prepayment schemes. The others were if employers paid employees' medical expenses,

perception of poor quality of health care in public hospitals and the maximum WTP amount respondents were prepared to pay for private-hospital -provided SHI.

Negative weights were exerted on MAXWTP by respondents' age, if at least one member of the household was sick in the month prior to the survey, the source of medical help for the sick member, and if an employee has medical insurance. Others were the quality of health care in private hospitals, if employer does not provide any benefits for sick employees, monthly health expenditure and the maximum amount respondents were WTP for SHI provided through public hospitals.

Conclusions: The study recommended that SHI should be implemented for the formal sector to boost resources available in the health sector. With a projected population of 472, 500 employees in 2002 and the predicted mean maximum **employee** WTP amount of K35, 000 and mean maximum **employer** WTP amount of K11, 724, about K22.067 billion (US $5.5 million) could be raised monthly from SHI. Nevertheless, there are a number of issues that must also be addressed. To ensure equity, government should ensure that there is cross-subsidisation of the uninsured by the insured. In this way, freed-up resources can be used to finance medical services that can cater for the uninsured. To guarantee efficiency health personnel's managerial and administrative capacities must be increased. Government also needs to play the role of a strict supervisor.

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LIST OF ACRONYMS

ATP	Ability To Pay
BLM	Binary Logit Model
BPM	Binary Probit Model
CBoH	Central Board of Health
CCSS	Costa Rican Social Security Fund
CLLM	Complementary Log-log Model
CSO	Central Statistical Office
CV	Contingent Valuation
GDP	Gross Domestic Product
HHARAA	Health and Human Resources Analysis for Africa
IHE	Swedish Institute for Health Economics
ILO	International Labour Organisation
LPM	Linear Probability Model
MMD	Movement for Multi-Party Democracy
MOH	Ministry of Health
NERP	New Economic Recovery Programme
NGO	Non Governmental Organisation
ODA	Official Development Assistance
OECD	Organisation of Economic Cooperation and Development
PBM	Primary Benefit Model
PHR	Partnerships for Health Research
SAP	Structural Adjustment Programme
SBM	Secondary Benefit Model
SHI	Social Health Insurance

SSA	Sub-Saharan Africa
UN	United Nations
UNAIDS	Joint United Nations Programme against HIV/AIDS
WHO	World Health Organisation
WTP	Willingness To Pay
ZIPH	Zambia Integrated Health Programme
ZSIC	Zambia State Insurance Corporation

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CHAPTER ONE

1.0 INTRODUCTION

Among the key objectives of health financing reforms in Zambia has been the need to generate additional financial resources and foster partnerships between users and providers through the introduction and expansion of user fees and prepayment schemes.[1] Through cost sharing plans, the Zambian government has sought to foster a sense of ownership among the population, thereby promoting private/public mix partnerships. Considering the level of poverty in the country, the government has prioritised the effecting of poverty-related exemptions as a way of removing financial barriers to the poor. Through the resource allocation formula of the Ministry of Health, equitable distribution of financial resources has been targeted and the budgetary reform has focussed on shifting resources away from higher-level services towards primary health care (MOH (1992a), MOH (1993), MOH (1995), MOH (1996), MOH (1998a) in Lake et al (2000))

The choice of the financing mechanism(s) therefore becomes critical in ensuring that objectives set out in the health sector are met. That choice is particularly important in ensuring the provision and public financing of the Essential Health Care Package[2] within the country. The provision of this package is considered to be the immediate goal of Government (MOH 1997; MOH, 2000). Social Health Insurance (SHI) is one of the alternative methods[3] of raising financial resources needed to provide health care.

[1] The Ministry of Health has particularly been encouraging the establishment of, and expansion of, cost sharing financing systems such as user fees and the prepayment/insurance schemes (in selected urban districts). See MOH (1992) and Kalyalya et al, (1998)

[2] The Essential Health Care Package according to the MOH is comprised of prescribed services at first contact, first referral, second referral and third referral levels. The 'package' summarises the services that would be covered by public funds. The means by which the general populace gains access to these services are also specified. See MOH (2000)

[3] See section 2.0.2 for a discussion of alternative methods of financing health care

This paper focuses on Willingness To Pay (WTP) for SHI among formal employees and employers in Zambia and is based on a sample of 293 employees and 37 employers. It answers the critical question of whether or not potential SHI members are ready or agreeable to pay for SHI in Zambia. This is the first stage of assessing the feasibility of implementing the policy in Zambia. The results of this research are helpful in determining if SHI can contribute to meeting the country's health financing goals and through them improve health performance. Ability To Pay (ATP), which is another important aspect that should be considered in determining feasibility, is not addressed in this paper.

1.1 Context

Most developing countries have undergone a number of political and economic reforms in the past 30 years, especially after the collapse of communism in Central and Eastern Europe. These reforms have cut across all sections of the less-developed countries' economies including the health sector. Reasons for undertaking these reforms are varied but prominent among them has been the economic decline that has resulted in shrinking resources for health service provision. Health reforms implemented aim at generating additional resources for the health sector including cost recovery, improving efficiency and increasing the role that the private sector plays in both provision and financing. (Mills and Gilson, 1988)

Berman (1995) submits that much of the health reform we now see in Zambia began in earnest in 1992 with the formation of a national Health Reform Implementation Team. This team was charged with developing and monitoring the country's own health reform programme. An important aspect of the reforms made in the health sector has had to do with reorganising health care financing. Generally, there has been a shift from predominantly publicly funded systems to ones that have private individuals and institutions playing a greater role. For a long time, Zambia has had a publicly funded health service (using general taxes). In recent times, the most prominent response to the problem of declining financial resources dogging the Zambian health system was the introduction of user fees at the point of service delivery, followed by implementation of the prepayment schemes (Kalyalya et al 1998, PHR 1997).

1.2 Rationale

Many Sub-Saharan African (SSA) countries have faced the problem of declining export earnings. This, coupled with the increasing debt burden,[4] has translated into diminishing budgetary resources making it difficult for governments to finance the health sector adequately. The donor society, specialised United Nations (UN) agencies and international monetary institutions have advocated for an increased role of households in financing the health sector (Cheru, 1989; Arhin, 1994).

As a consequence, governments are implementing a variety of policies that are meant to supplement tax revenues by introducing or increasing direct household contributions to the health sector. Already, a number of countries in SSA have made some steps away from a predominantly government-funded health sector: introduction of user fees at point of service, prepayment schemes, purchase of drugs and encouragement of non-profit-making but fee-charging non-governmental organisations. This has meant an increased role for households in financing health service provision (Berman, 1995; Russell, 1995).

For Zambia then, a key issue was the determination of the kind of financing mix that would be used in financing health provision. SHI is one method that increases the role that households have to play in terms of the monetary contribution made towards meeting health care costs. If SHI is chosen as a financing mechanism, policy makers and implementers need to ascertain the financial burden that should be placed on households. The question of why SHI should be considered is dealt with in 2.0.2.3

1.3 Objectives of the Study

This study surveys formal employees and employers in Zambia in a bid to assess if they are WTP for SHI or not. This is a crucial step before deciding if it is both feasible and desirable to implement SHI in Zambia.

Specifically, the objectives of the study are to:

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[4] Debt stood at over US $206 billion at the end of 2000. See Ajayi and Khan (2000)

a). Present the socio-economic, demographic and health characteristics of potential SHI scheme members.

b). Determine factors that influence WTP of households for SHI.

c). Estimate the impact of the explanatory variables identified in (b) on household decisions to subscribe or not subscribe to SHI membership

d). Make policy recommendations on the basis of the results from the study.

1.4 Methodological Approach

The primary issue is the assessment of the socio-economic, demographic and health conditions of Zambian formal employees in a bid to answer the following questions:

(i) (a) What is the size and composition of formal sector employment in Zambia? (b) What are the key features of health seeking behaviour of the formal employees? (C) What is the worker's current method of payment for health services?

(ii) Is there potential for coverage of formal sector employees and their dependents? How much money would be raised from SHI?

(iii) Would there be an increase in utilisation of health services following introduction of SHI? Are the existing health services capable of meeting any increases in demand that may follow the establishment of SHI?

(iv) What health services must be covered by SHI? Who should be covered by SHI, and how can equity objectives be met?

(v) Do employees and employers endorse SHI?

(vi) What are some of the factors that influence WTP for SHI? What is the impact of explanatory variables on the maximum amount that respondents are WTP?

(vii) If the conditions for SHI are not favourable, is the situation redeemable and if so, what kinds of measures need to be effected?

Data on these issues were collected through questionnaires, interviews with various key resource persons as well as through a literature review.

Russell et al (1995) posit that the amount people are WTP can be assessed in two ways: (a) evaluating and modelling past health utilisation, expenditure and responsiveness to prices (this method derives measurement of WTP by studying tradeoffs of health and non-health purchases) and (b) directly asking people how much they would be willing and able to pay for a particular health care service or product. Individuals are asked how much they would be WTP assuming a hypothetical market where health products/benefits can be purchased. WTP is discussed in greater detail in 2.0.7.

The second method assumes that people have had no previous experience of buying the health service (SHI in this case) and bases its conclusions on respondents' expectations. In addition, it overcomes three problems associated with the first method. First, a market for the health service being estimated may not have existed or may have been provided free of charge. It would therefore not be possible to obtain any information on past health patterns. Second, the price paid by patients in the past may not be a reflection of the maximum amount they are WTP. Last, the first method does not take into account the impact of specific conditions and non-price factors on respondents' expenditure and utilisation patterns (Russel et al 1995: 94-95).

This study utilised the second method. This technique also known as Contingent Valuation (CV) is discussed in fuller detail in 4.0.1.1. But like every other research procedure, the chosen method also has some problems and these are discussed in 5.0.1.1 and 5.0.5

The results will be important in guiding policy makers in their policy making process of a SHI scheme for the country.

1.5 Overview of Structure of Report

The rest of the study is organised into six (6) chapters. Chapter two reviews literature that is relevant to the study. Various health care financing methods are examined. Key internationals SHI themes are discussed in addition to the various approaches to measuring WTP. Chapter three examines the macroeconomic environment in Zambia and provides the situation analysis of the health sector in this environment. Chapter four provides the conceptual framework in which issues arising from the Literature review are linked to specific ideas and methods in which the study is undertaken. In Chapter five, the approaches taken in conducting the research and meeting the objectives of the study are presented. The type and size of the sample used, data collection methods, and limitations of the study are given. The results of the study make up Chapter six with the conclusions and policy recommendations coming in Chapter seven.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.0.1 Aims of this Chapter

This section sets out to examine literature that is pertinent to understanding the various health financing methods. Some of the strengths and weaknesses of these financing strategies are presented and they form the basis upon which SHI is chosen. The origins and key features of SHI are explored before examining country SHI experiences. This sets the stage for discussing how the feasibility and desirability of SHI for other countries can be assessed.

2.0.2 Financing in the Health Sector

By 'Health Sector' we mean "the totality of policies, programs, institutions, and actors that provide health care-organised efforts to treat and prevent disease"(Berman, 1995: 14). The issue of health financing refers to many aspects of funding health care provision. While it mostly refers to resources in the form of money, it may also include other resources such as voluntary labour and gifts in kind (pieces of equipment, supplies) (Goodman et al 1993). The method of health care financing will have a significant impact on the way health provision services will be run as well as on the type of care provided in the health sector (HHARAA, 1994).

2.0.2.1 Health care financing systems

Considering alternative methods of financing health services leads to the examination of both new sources of income as well as old ones. Principally, there are two streams of health care financing methods and these are the public and private modes (Wagstaff et al, 1999) and van Doorsalaer et al, 1999).[5]

[5] Though we have 'alternative' methods of financing the Health sector, it is important to note that countries will usually have a combination or package of two or more financing systems rather than a single method. See for instance Wagstaff et al (1999).

1) Private financing methods- Falling in this group are direct payments (user fees and prepayment schemes) and private insurance. Under user fees, a charge is made to the patient or user of a health service for a treatment or service received. Payment is usually made for such things as consultation, drugs and dressings, or diagnostic tests (Gertler et al, 1987).

For prepayment schemes, members of the scheme have to contribute a predetermined sum to the scheme on a regular basis. This payment guarantees that members of the scheme will receive health for little or no extra charge when they require it (CBoH, 1998). It is thus a form of insurance mechanism that guards against the risk of falling ill and suddenly having to pay high treatment costs.

For private (health) insurance, insurance companies or agents take in premium payments in exchange for a promise to pay a much larger amount to the purchaser of the policy if anything detrimental to their health occurs. Contribution of premiums is voluntary and described in legal contracts (Milambo, 1998 and Mwemba, 1996)

2) Public financing methods- Here we have general taxation (direct and indirect), Social Insurance and Official Development Assistance (ODA). Tax revenues raised by government are allocated to different areas of public spending and these include health. Governments decide what proportion of their total budget has to be spent on the health sector. It is also possible to have some specific or earmarked[6] health tax e.g. on health damaging goods or activities such as smoking (Buchanan, 1963 and Duncan and Jones, 1995).

Social Insurance or Social Health Insurance (SHI) is a system where people, such as those in formal salaried employment, make compulsory contributions to a social insurance fund. This fund is usually independent of government but works within a tight framework of regulations. The contributions are a specified percentage of employees' income. To ensure that the burden of

[6] Buchanan (1963: 457-458) renders earmarking as referring to "...the practice of designating or dedicating specific revenues to the financing of specific public services". Duncan and Jones (1995) call it hypothecating.

contribution is shared, employers and/or government also make additional payments on workers' behalf (Kutzin, 1995).

ODA refers to grants and non-commercial loans that come from bilateral or multilateral donors to be used in the health sector (Mvula and Munthali,1997; Gilson, 1997; Musumali, 1997 and Pvignani, 1997)[7]

Goodman et al (1993) discuss a third financing mode, which may not be categorically placed into either of the aforementioned two groups. This financing mechanism termed "other methods" includes such arrangements as Voluntary work, Income generation and occasional contributions and Fundraising.[8]

2.0.2.2 How do health-financing systems compare against one another?

One method of examining the effect that a health financing strategy has on its broad objectives is by looking at its implications for vertical and horizontal equity as well as evaluating its redistributive effect, which is a function of both (Van Doorslaer et al, 1999). The redistributive effect can be further decomposed into a progressivity, horizontal inequity and reranking component, but the vertical effect (progressivity) is the most important of the three. A closer look at the progressivity and redistributive effects of the four main sources of health finances[9] is very informative. A study of 12 OECD countries conducted (ibid) found that the redistributive effects of public sources of finance were positive though small with less differential treatment while those of private sources of finance were negative and largely caused by differential

[7] It is also true that some donors support health activities implemented by non-governmental organisations (NGOs). Categorizing ODA under public methods of financing is therefore meant to separate that part of donor money that goes to government agencies.

[8] Voluntary work is seen as an indirect way of 'financing' health services. It is seen as a form of financing in that labour provided free of charge has the effect of reducing the wage bill thereby allowing for monies initially earmarked for salaries to be used in other cost centres. Income generation encompasses all the ways of raising money other than the principal methods in (1) and (2). Certain of these methods may not be directly linked to the health system such as running a bakery, fish farming or operating a printing press. Some income generation activities may be part of health programmes such as renting out health education equipment (videos, film projectors) for entertainment purposes or grazing goats on health care grounds at a fee Occasional contributions and fundraising include all material, land or cash resources that may be obtained through fundraising events such as festivals, raffles or lotteries (ibid).

[9] These are (1) General taxes, (2) SHI, (3) Direct payments and (4) Private Insurance. (1) and (2) are public sources while (3) and (4) are private sources.

treatment. General taxes were pro-poor in their redistributive effect[10] as was Social Insurance except in two countries.[11] Results for Private Insurance were varied: being pro-rich in some countries and pro-poor in others. Direct payments had a pro-rich outcome in all countries.

Another study of 13 countries by Wagstaff et al (1999) concluded that general taxes were progressive for all these countries.[12] Social Insurance was found to be regressive in three countries and progressive in the rest. In addition, there was non-involvement of part, or all, of the well off in countries where Social Insurance was regressive (notably the Netherlands and Germany) and virtual exemptions of pensioners and the unemployed in SHI-progressive countries (e.g. France). In most of the latter countries, Social Insurance proved to have been a more progressive financing source than general taxation. Private health insurance had a mixture of results, being progressive where there was higher demand for insurance cover by the well off, and regressive where it was relied upon by the bulk of the (poorer) population. Out-of-pocket (direct) payments were extremely regressive revenue sources. The variances in exemptions from these direct payments was however reflected in the differences in regressiveness of various countries.

2.0.2.3 Why Social Health Insurance (SHI)?

According to these two studies, SHI can meet the criteria of being both a pro-poor financing strategy as well as one that takes into consideration peoples' abilities to pay (progressive). Exemptions also ensure that the disadvantaged are catered for while exclusions prevent those that are better off from benefiting at the expense of the underprivileged. Thcugh these results are specific for countries that are outside Sub-Saharan Africa (SSA), the conclusions would to a great extent hold for the latter as well. Korte et al (1992: 8) agree:

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[10] Indirect taxes were pro-rich in their redistributive effects in contrast to direct taxes. But the redistributive effects of direct taxes were higher resulting in a positive general taxes-redistributive effect. See van Doorslaer et al (1999)

[11] The pro-rich results in these two countries were due to fact that high earners were either excluded or they opted out of the SI schemes. The contribution ceilings were another factor. See ibid

[12] Here again, indirect taxes were regressive while direct taxes were progressive. Overall, general taxes were progressive

> The development of workable risk sharing schemes is perhaps the most important pillar for a sustainable health care system in the low-income countries of Sub-Saharan Africa. The establishment of centralised national health insurance schemes to cover catastrophic health risks for all citizens should at best be a long-term objective...Even under present conditions, foundations can be laid in the form of payroll deductions and compulsory employer contributions.

To complement other policy instruments, the World Bank (1987) also advocated greater reliance on insurance mechanisms.

It is easy to see why such a standpoint has been taken. Most countries in SSA adopted cost-recovery as one of the foremost objectives of health sector reform, notably by means of user fees. But user fees have been an unsuccessful way of raising substantial revenue due to the financial incapabilties of the majority of the people in SSA. Governments face further financial constraints due to their reduced capacity to raise tax revenue and uncertainty about continued donor assistance (Bennett and Ngalande-Banda, 1994). In addition to raising cost-recovery ratios, another plus for SHI is that through the cross subsidising of the poor by the rich, SHI performs a social solidarity function. This role is consistent with the ideals of creating a more humane society (Criel, 1998). But as Normand (1997) and Kutzin (1997) succinctly assert, the main function of SHI is the mobilisation of additional non-governmental sources of funds.

Normand et al (1994) affirm that the following benefits may result from SHI:

- It can provide a stable source of income for health services
- It strengthens patients' rights as customers of health care providers.
- The flow of funds into the health sector is visible
- SHI has the advantage of combining mutual support with risk pooling in that it allocates resources according to need while distributing financial burdens according to the ability to pay.
- It has the added attraction of maintaining a level of independence even when pursuing government policy objectives.
- SHI brings about efficiency in the provision of health services.

2.0.3 Origins of Social Health Insurance

Funding access to health care through Social Health Insurance (SHI) has its origins in Germany in the nineteenth century whose earliest development was without any significant interventions from government (ibid). It was reliant on having many clients as well as insurers (both for profit and non-profit) to ensure that risks were pooled over a number of people (or groups of people) with varying degrees of risk. Large numbers also allowed the insurance scheme to be organised by occupation, industry or geographical region (Busse et al 2001). Important to the development of SHI as it now exists in Europe was the concept of solidarity. Solidarity refers to the understanding on the part of contributors that they may have to compensate the less privileged. It is a consequence of a long social development process where there has been the institutionalisation of the spirit of camaraderie between the healthy and the sick, the rich and the poor and the elderly and the young (Kesenne and Evrard, 1997).

Underlying SHI is the principle that provision of access to care must be on the basis of need but payment must be on the basis of income or ability to pay. In most cases, the nature of SHI mechanisms is that the funds are formally separate from general taxation, and may be organised and managed by autonomous organisations. Normand et al (1994) posit that the SHI managers usually set the contribution rate. The aim is that the costs for all necessary services are covered although government sometimes sets a ceiling.

2.0.4 Key features of SHI

SHI is typified by mandatory, earmarked and income related contributions with the state taking the responsibility of being the financial risk-bearer in case of financial deficit (Criel, 1998). In the majority of settings, both employers and employees make contributions. This ensures that the burden of paying for health is shared. In addition, employers and employees share responsibility for the management of the fund. Employers normally do this by applying some pressure on SHI managers thereby ensuring that an efficient service is delivered (Busse et al, 2001).

In cases where SHI has been implemented, every employee, for instance, has a specific amount or a percentage that is directly deducted from their payroll. For this

category of citizens, therefore, there is an element of compulsory contributions/membership (Kutzin, 1997)

Bennett and Ngalande-Banda (1994) distinguish between two types of SHI schemes, differentiated by the source of financing. The Primary Benefit Model (PBM) is where specific health insurance contributions are used to finance health care benefits. This is the nature of SHI that obtains in such countries as the Cape Verde Islands, Gabon and Kenya. In the Secondary Benefit Model (SBM) health care benefits are financed from a general pool of social security contributions. This pool of contributions is not restricted to covering health care-related expenditure only but to other types of benefits as well. Examples of this form of SHI can be found in Congo, Cameroon, Mali and Senegal.

For both models, it may be the case also that the types of health services to be covered by the fund are specified before hand. This may lead to the presence of categories of sickness funds, each catering for a different set or combinations of sickness. This introduces an element of choice, which has the advantage of improving efficiency due to competition (Normand et al 1994, Busse et al 2001)

In SHI, there is always conflict between the principles of self-interest and solidarity. Health care policy implementers have to contend with striking a balance between the two. Self-interest in this case refers to the fact that people can only decide to engage in a voluntary collective agreement if the perceived potential benefits are viewed as not being too low, otherwise they will just pull out of the scheme or simply not engage in it (Criel, 1998). Solidarity on the other hand, calls for unity and willingness of contributors in accepting that the size of returns may not match the resources that they put in.'[13]

Because of the conflicting ideals of self-interest and solidarity, two major drawbacks come to the fore. These are adverse selection and moral hazard. As will become

[13] But where health insurance is mandatory as in SHI, solidarity is institutionalised.

obvious later on, these problems are both predicated upon the presence of information asymmetry between consumers and insurance providers.

Adverse selection simply put is preferential selection of high-risk individuals. This is the case when people that expect, with great certainty, that they will need health care choose to buy insurance more often than others.[14] This can only be the case if there is information asymmetry where the insurer cannot differentiate high from low risk because he lacks full information about the risk levels of insured persons (Soderlund, (2000) and Getzen (1997)). Another reason would be that insurance suppliers, driven by equity goals, offer insurance policies based on 'community-rated' premiums in which case low risk consumers will opt out (Arhin, 1994). As Criel (1998) rightly points out, adverse selection from the public health point of view is not a problem because it ensures that health concerns of high-risk individuals are taken care of. The only problem is that it has negative implications for financial sustainability of health financing.[15]

Mills (1998) defines moral hazard as "the tendency of individuals, once insured, to behave in such a way as to increase the likelihood or size of risk against which they have insured". This is one side of the story as Soderlund (2000) and World Bank (1993) distinguish between two types of moral hazard.

The Demand-side-moral-hazard is specific to consumers. Because of information asymmetry, the consumer over-consumes health services in a scenario where consumption of a lower amount of health care would be adequate to resolve the problem. This presents the danger of increased demand where services deemed by medical professionals as "unnecessary" might be asked for[16]. This is made worse in the absence of an effective gate-keeping system (Getzen, 1997).

[14] For instance, patients with chronic diseases.
[15] Adverse selection can be dealt with by improving the information sets of 'players' in the health markets i.e. by monitoring users' lifestyle and consumption patterns as well as those of providers. Another way would be to fix providers' remunerations at a constant level despite the magnitude of services provided. This would help in limiting unnecessary utilisation of health services (Criel, 1998)
[16] Mills (1998)'s definition falls under this type of moral hazard.

Supply-side-moral-hazard refers to health care providers who replicate health care costs especially when payment is in the form of fees-for-service as opposed to known fixed salary remuneration. The provider provides more treatment than the member would have demanded if he had perfect knowledge about his health condition. This is supply-induced demand. Both types of moral hazard however lead to wastage of resources (Schotter, 1997).[17]

In addition to these two well-documented problems, one must look out for high administrative costs due to the large number of specialised personnel that are needed to run this system. It can also cause large deficits and drain public funds to keep it solvent unless there is a good design and well-managed operations. This inevitably leads to problems of cost containment, which is one of the goals that need to be achieved by any financing mechanism (Kutzin, 1997). In addition, there is the puzzle of how workers in such sectors as agriculture and those that are informally employed would be catered for. In reference to the unemployed or those in informal employment it has been the case that certain governments would come in and make contributions on behalf of these groups (World Health Organisation, 1997). The usage of SHI for political mileage is another issue that needs to be addressed as this may cause social insurance plans not to meet health goals (Criel, 1998)

2.0.5 SHI experiences of other Countries

SHI has been implemented with success in some nations notably Costa Rica and Germany. In Costa Rica, contributions are made to the Costa Rican Social Security Fund (CCSS) that was created in the early 1940s. SHI has been very successful to an extent that the country's health indicators resemble those of Europe, the USA and Canada rather than those generated by countries with similar GDP per capita levels (Normand et al, 1994). The CCSS covers curative and rehabilitative care, individual preventive services (e.g. immunisation) and some educational services. Overall, all of the country's 29 hospitals are owned by the CCSS resulting in the CCSS providing 95

[17] It is important to note that the Moral Hazard problem can be found in all health systems with a "third-party-payer". Moral hazard can be addressed through a number of mechanisms such as pre-authorisation from funders before users or providers can seek or provide health services, monitoring provider behaviour, establishing and improving provider-user networks to enhance communication among others (Sonderlund et al, 1998).

percent of hospitals services and about 70 percent of all consultations (Busse et al, 2001).

The counterpart of the CCSS in Germany is the set of health funds (normally referred to as "sickness funds"). Health services are funded through compulsory contributions to these health funds. These are non-profit-making organisations with operations in a particular geographical area or for particular occupational groups. Patients can choose the type of service they want from the provider they visit. About half of the hospital beds are publicly owned (a third of all hospitals), with the not-for-profit organisations owning 35 percent of the beds and private profit making organisations owning the remaining 15 percent. Overall, SHI provides at least 65 % of total health revenue (ibid and Wagstaff et al, 1999).

A number of countries in Africa have proposed social insurance for their employed workers. Kenya is one such country that has had some extensive experience (since 1966) in implementing a compulsory nationwide social health insurance scheme for all public sector employees. It is voluntary for others. Cameroon has had its scheme since 1956 though only 60 % of the formal workforce and their dependents were insured (WHO, 1994 and ILO, 1993). In 1999, Tanzania passed a law establishing social insurance that would initially only cover the civil servants and their families (*Government of Uganda, Unpublished*). Egypt is the one other African country that has some form of SHI in place.[18]

Experience in both developing and industrialised countries suggests that though SHI has had varying levels of success, there are still problems associated with equity and efficiency (Kutzin, 1995). Equity concerns have mainly been centred on the need to improve access to care for disadvantaged groups. Little scope for the reallocation of resources in favour of more cost-effective services has been a major barrier to achieving efficiency, especially in the developing countries (Bennett and Ngalande-Banda, 1994). Another observation is that SHI has been successful in countries where it was the major source of financing the health system, such as Germany and Costa

[18] As already mentioned in 2.0.5, various strands of SHI exist in Congo, Cameroon, Mali, Senegal, Cape Verde Islands and Gabon.

Rica (Normand et al 1994). In addition to examining equity and efficiency concerns of SHI, therefore, it would be important to know if SHI can be as successful even in countries where other methods of health financing are predominant (i.e. having SHI as an additional source of income).

Theory has it that SHI provides a stable source of income for health services and that it enhances consumers' rights as customers. In terms of health system outcomes, SHI benefits should improve health, protect against financial risk and increase beneficiary satisfaction (Busse, et al 2001, Kutzin, 1995)

2.0.6 Feasibility and Desirability of implementing SHI in other countries

What conditions then should be in place before a country can implement a SHI scheme? Kutzin (1997) asserts that for any form of insurance to take root, the subjects of feasibility and desirability need to be addressed. These two themes must be addressed for every specific country prior to implementation of the policy. The fact that forms of SHI differ across countries and continents serves to underscore the need to avoid global prescriptions on the role and nature of SHI.

Analysis of feasibility can be achieved from the study of the following elements (*Government of Uganda, unpublished*):

- The existing socio-economic conditions so that financial viability and affordability can be gauged.

- Political Feasibility - The role that political players have in the success of SHI can never be over emphasised. Political considerations should be present at all stages of policy development for health sector reform.

- Other Institutional Constraints - This would refer to the institutions charged with the administration and managerial responsibilities in SHI. The way the existing capacity of these institutions is used will determine and affect a country's decisions about developing SHI.

Desirability concerns broader issues of equity, sustainability and efficiency. Would SHI extend "the degree of cross-subsidy within the overall health system?"(McIntyre and Gilson, forthcoming in Doherty et al, 2000:39). An attempt to examine whether SHI would benefit the majority of the population requires an understanding of potential clients' preferences and predilections. Since consumer responses to prices will influence service utilisation levels and patterns as well as revenues collected, it is important to conduct a study to obtain information on probable consumers' WTP. This information would aid in answering the question of how attractive and appropriate SHI is (Russell et al, 1995).

2.0.7 Concept of Willingness to Pay (WTP)

The WTP method is an approach that gives an indication of whether or not individuals are prepared and agreeable to conditions of a given policy, taking into account the benefits that go along with the policy. A major field where WTP has been put to use is economics (Thompson et al, 1984; Donaldson et al, 1989; Donaldson, 1990 in Akweongo, 1999)

Much of the work that has used the WTP approach in the health sector has been in valuing benefits of health programs and interventions. Russell et al (1995) asserts that WTP is useful in social and economic contexts to obtain information on how demand for health services would behave after the introduction of user fees, for instance. Questions of how much income could be potentially raised as well as whether or not such a policy is sustainable are answered.

As noted in section 1.4 above, there are two methods through which WTP can be measured. In this study, the second method was used. Because of the hypothetical market structure that is assumed, this technique is a form of contingent valuation (CV) i.e. it is contingent on assumptions made (see section 5.0.1.1 for fuller discussion of the CV method)

2.0.8 Previous studies on Willingness To Pay (WTP) for SHI

Muheki (1998) conducted a WTP study for SHI among formal sector employees and employers in Uganda. A Log-linear regression model was employed to explain the factors that affect the (log) maximum amount that employees were WTP for SHI [Log

(MAXIMUM)]. Found to have had significant positive effect on Log (MAXIMUM) were respondents' salary, educational level, and monthly expenditure on health, their perceptions on quality of health care in mission hospitals and if they would forego any items by paying for SHI. 77.5 % (35 %) of the employees (employers) interviewed were willing to join SHI. 68 % of the employees agreed that SHI should be implemented. The 32 % that were opposed to implementation of SHI cited corruption in government and track record of failure with previous attempts for their decision. Private sector employees gave higher bids than their public sector counterparts and this was attributed to the higher salaries for the former. The study recommended that SHI be implemented with the following qualifications:

- There should be further education on health insurance for both employees and employers.
- Contributions should be a percentage of the income/wage as opposed to a flat rate. Tax reductions should also be considered.
- Quality of health care especially in public institutions should be improved.

A study to examine WTP for Compulsory Health Insurance (CHI) among employers in Tanzania was done by Smith and Rawal (1994). Over 73 % of the employers were for the idea of implementing CHI with those in parastatals being in the majority. About 33 % said employers should pay on behalf of employees while 20 % thought that the burden should be shared between the employer and the employee. Another 30 % were non-committal. Potential for coverage was placed at 12 % of the total population and this translated into one third of outpatient services and over 20 % of inpatient services. The study concluded that the role of employers in health care financing could not be ignored. CHI for the formal sector may still be meaningful because of the strategic position that formal sector employees and their dependents have in terms of usage of expensive government hospital services. The study proposed low payroll cuts, economic use of resources as well as cost effective drugs. Providers were to be paid on a capitation basis. No mention however was made of the determinants of the decisions taken by employers.

Both studies therefore concluded that implementation of SHI was a step worth considering in the two East African countries. These results open up the possibility for other African countries to court SHI as well.

2.1 Summary and Key Messages from Literature Review

- This chapter has presented SHI as a viable form of financing health care in OECD countries. In these nations, the financing method is consistent with meeting the goals of equity, efficiency and financial sustainability. The extent to which these results would be obtained in SSA depends on its design.

- The development of SHI and the obtaining circumstances, in which it grew, namely social solidarity, was outlined. It would be important then that the extent to which social camaraderie exists in SSA be assessed when considering whether a country in the region should take the path of SHI or not.

- Unique experiences of SHI in the European and African countries studied have served to emphasise the need to avoid the temptation of blanket prescription of how SHI should be implemented. The implementation process should be sensitive to the country-specific settings.

- Of great concern to SHI are the information-asymmetry-based problems of adverse selection and moral hazard. Their existence underlines the need to consider ways of combating the two pitfalls during the design and implementation processes. These combating methods are all centred on addressing the problem of information inequalities between the supplier and buyer.

- The study of WTP for SHI continues to prove to be an important part in analysis of feasibility and desirability of SHI. Muheki (1998) cited respondents' salary, educational level, and monthly expenditure on health, their perceptions on quality of health care in mission hospitals and if they would forego any items by paying for SHI as having a significant positive effect on the amount people were WTP for SHI in Uganda. Based on this and

the proportion of employees and employers that were willing to join and pay, Muheki (1998) recommended implementation of SHI. Smith and Rawal (1994) also encouraged the employment of SHI as a health care financing mechanism in Tanzania and made suggestions for the design process as regards payroll deductions, use of drugs and provider-payment methods.

CHAPTER THREE

3.0 ZAMBIA – COUNTRY DISCUSSION

3.0.1 Aims of this Chapter

This section presents a comprehensive analysis of the trends in the macroeconomic environment in Zambia. In this analysis, the reforms that have taken place since independence are evaluated. Of particular importance are those reforms that are related to the health sector. Past attempts at health insurance in the country are also reviewed. Since SHI is being proposed for formally employed Zambians, an analysis of the Zambian formal sector, both public and private, is done.

3.0.2 Macroeconomic Environment in Zambia

From 1964 to the early 1970s, the rising copper prices increased government revenue providing the resources for an initial 18 months' transitional development plan and, from 1966, the four years First National Development Plan (FNDP). The FNDP was succeeded by the Second National Development Plan (SNDP), which sought to diversify the economy especially in agriculture and industry. During this period, overall GDP increased at an annual rate of 8 percent. Government expenditure had increased to 41 percent of GDP (Cheru, 1989).[19]

High revenues also made it possible for government to adopt populist positions such as introduction of subsidies to the parastatals and agriculture as well as provision of health services free of charge (ILO, 1981).

The above trend was reversed during the mid 1970s mainly as a result of a general poor performance of the economy. To a great extent, this decline reflected the impact

[19] The number of hospitals also increased from 48 in 1964 to 75 by 1974 and life expectancy rose from 40 to 45 years over the same period mainly as a result of improved health facilities. See Cheru (1989)

of the world recession on copper prices and demand. Another compounding factor was the 1973 Arab oil crises and the ensuing rise in oil prices. The decline also brings to the fore the dislocations and disruptions, particularly of transport, caused by the final stages of the liberation struggle. As a result of Zambia's involvement in the emancipation fight, the country could not use the routes to her south (i.e. through Zimbabwe, Mozambique, South Africa and Angola) for her exports and imports and this came at a great cost (Cheru, 1989: 120-142).

A number of corrective reforms were implemented from the mid 1970s to try and salvage the country from its problems. A case in point was the implementation of the New Economic Recovery Programme (NERP) in 1987. But due to the failure of the NERP, the government of Zambia renewed policy dialogue with donors, mainly the IMF and World Bank. The IMF approved Zambia's Policy Framework Paper (PFP) in September 1989 for the 1990-1993 period (Van de Walle, et al, 1994). Political dynamics, which eventually resulted in the end of the second republic, caused the suspension of the IMF shadow programme in September 1991.

The Movement for Multi-Party Democracy (MMD) government resurrected the reform programme after October 1991. Among the policies that were followed were:

a). Liberalisation of the monetary/banking sector.
b). Monetary policy measures to adjust interest rates and tighten monetary policy.
c). Reform of parastatals to improve efficiency and performance

The reforms introduced by the MMD government cut across all sectors and the health sector was selected as a priority area. As a result, the country made policy changes in the health delivery system.

3.0.3 Analysis of Health Sector in Zambia

Before independence, there was an immense presence of private clinics and fee-paying homes that catered for the white population. A Medical Aid Scheme also existed for the white population (ZSIC, 1997: 1). In line with philosophy of the humanism, free health care was promoted during the first and second republics. The ascension to power of the MMD government brought with it the need to improve the

equity[20] and sustainability of health services delivery. Equity in this case implies ensuring access across geological and economic barriers. It is concerned with questions of how the benefits and burdens of health care are distributed as well as the procedures that guide these distributional decisions. Kalyalya et al (1998) further characterised equity in Zambian context as comprising of three elements: i) equal opportunity of use for equal need ii) payment on the basis of ability to pay iii) effective representation of all community interests in decision making about health system development.

Underlying the health reforms was a desire to build effective leadership, accountability and partnerships. Of particular importance also was a commitment to "support health care as close to the family as possible" (MOH, 1998: 2). Steps were taken to move away from an extremely centralised system to a more decentralised one. To effectively oversee a decentralised health care system, the Central Board of Health (CBoH) was established. It was to be a national agency responsible for the overall technical management of a decentralised health sector As a result of decentralisation, districts took on a much more important role in management of health care services.[21] However, the MOH retains accountability for adherence to policy (UNZA & IHE, 1997). Another major development was the establishment of the Zambia Health Care Package. The 'package' specifies what health care services were to be covered by public funds and which ones were not to be covered. It also refers to the means by which the population gains access to services and also specifies the services at the first contact, first referral and third referral levels. In line with this development and bearing the fact that SHI is a public financing method, it is expected that SHI (if implemented) should cover the package. But if SHI is to be a wholesome package, ways must be sought of enabling part of the contributions to be used to cover certain services outside the package.

The MMD Government also had to contend with the realisation that budgetary resources were insufficient to meet the basic health needs of the Zambian population.

[20] Equity has been an important focus especially in view of the imbalance in service availability and accessibility between urban and rural areas. See MOH (1992a: i; interview data) in Lake et al (2000)
[21] Other points of emphasis were on professional autonomy and decentralisation of planning, budgeting and financial management (Joint Health (Pre) Appraisal Mission, 2001)

This called for identification of ways of sourcing additional resources for the health sector. Of particular note was the determination to move away from free medical care. Ordinary people were to be responsible for the payment of their own medical fees: "Everyone in Zambia with an income shall contribute towards the maintenance of his or her health"(ZSIC, 1997: 1).

In addition to equity, another criteria for gauging the performance of health policies, including health-financing methods, has been sustainability. Sustainability in this instance has been seen to include financial sustainability, mobilisation of resources accompanied by improvements in allocative and technical efficiency and the political acceptability of reforms. Under this same umbrella of sustainability have also been aspects of organizational capacity of the system to develop and implement reforms over time (Lake et al 2000).

3.0.4 Financing Reform for Health Care in Zambia

Strategies for health financing reform for Zambia, as for most of SSA, can be grouped into three categories (HHRAA, 1997)

- Raising revenue through cost-recovery methods such as user fees, various private and community-based social financing and insurance designs.
- Improving the allocation and management of existing health resources
- Expanding the role that the private sector is to play in a predominantly government-based health system[22]

Financing policy is usually part of the broad objectives and principles of the entire health sector, which in turn are a component of macroeconomic policy change. Policies relating to financing were therefore developed within the context of the broader public sector policy (Gilson and Mills, 1995). The goal of the health care financing policy was "to mobilise resources through appropriate and sustainable means, and to ensure efficient use of those resources, in order to guarantee equity of

[22] Though the Zambian Government has made a commitment to partnership with the private sector (see *National Strategic Health Plan*, 1993: p 23), achievement of this objective on a noticeable scale still remains to be seen in the country.

access to cost-effective, quality health care as close to the family as possible"(MOH, 1998:11).

As a consequence, a national health care financing policy began being developed in 1993. Three measures of improving identification, mobilisation, allocation and use of resources were identified:

- Increased budgetary contributions.

This meant increased sectoral contributions from the Ministry of Finance to all national sectors including health. Adherence to conditionalities attached to the World Bank Economic and Social Adjustment Credit in 1994 formalised this measure. Table 3.1 in section 3.0.7 below shows the increase in the percentage of government expenditure on the health sector from 6.4 percent in the 1980s to about 7.3 percent in 1993 and 13.6 percent in 1996. The share has however fallen thereafter and was at 6.9 percent in 1999.

- Budgetary Reform and Increased Efficiency

The MOH (1992: 32) emphasised that "Health care quality must be improved as part of a process which utilises better management to reduce costs and to enhance efficiency and effectiveness before charging consumers". To achieve this, responsibilities and resources were to be decentralised to autonomous district and hospital boards. Efficiency was to be further increased by the strengthening of management systems and capacities at all levels. Imbalances in resource-allocation between urban and rural health centres and curative and preventive services were to be addressed through development of a more equitable resource allocation method (MOH, 1997).[23]

[23] A move to achieve this involved introduction of a needs- based formula using per capita allocations initiated in January 1994. Factors considered in the formula were population density, status of the district as provincial capital, cost differences (proxied by a fuel price index), presence of a bank as a proxy for availability of services and inputs and proneness to Cholera or Dysentery so that (preventive and promotive services could be planned for) (MOH, 1997)

- Cost Sharing

It was thought that cost-sharing especially in the form of user fees was a viable way of raising the much-needed additional funds for the health sector. In particular, the government encouraged cost sharing in response to the double burden of the shrinking revenue base and the escalating burden of disease. Health reforms were and are still being conducted with the support of international donor agencies within the framework of macroeconomic stabilisation and adjustment aimed at restructuring the entire economic set-up, and the public delivery system in particular (Lake et al 2000). Commentators acknowledge that the legal basis for charging user fees was laid down in the 1985 Medical Services Act that specified means of charging fees to non-Zambians and all patients in private facilities (Kalyalya et al 1998: 12).

Because of the prevailing economic environment, there were fears that user fees could hurt the poor and other vulnerable groups. This was despite the fact that these fees were much lower than full cost-recovery levels. As a consequence, the government introduced prepayment schemes and demographic-based exemptions in 1994. Eligible for exemptions from paying fees were individuals aged 5 and younger, those 65 and older, and those suffering from chronic diseases (PHR, 1997)

Prepayment schemes were officially introduced as a financing policy in early 1994, despite the fact that this method was not initially mentioned in the original reform documents. The scheme operates in selected districts and central hospitals (op cit).

Consideration of community financing schemes was meant to focus on promoting local community participation in health care financing initiatives. This scheme was to be linked to such services as revolving drug funds; contributions of in kind donations or cash towards health service provision. The Mwase Mpangwe Initiative in the Eastern Province was proposed for national implementation in the mid-1993 but the

plan never took off and it was abandoned as a formal national policy in early 1994 (ibid)

In August 1995, a Health Care Cost Scheme (HCCS) was introduced in nine pilot districts. This initiative by the Ministry of Health and the Ministry of Community Development and Social Services was a multi-sectoral approach to mitigate against the adverse effects of the Structural Adjustment Programme (SAP). This scheme was to act as a safety net for cushioning the poor against the negative effects of medical fees, primarily resolving the problem of reduced access that the fees caused (Ponga et al, 1997).

Government's financing policy recognised the importance of pursuing cost-recovery in addition to cost sharing.[24] The following areas were covered in the financing policy:

(i) Sources of funds for health care
(ii) Methods of allocation of funds and
(iii) Associated institutional arrangements.

It was pointed out that for cost-sharing to be equitable, the contribution rates should be set at levels that would be affordable to the majority of the local population (MOH, 1998: 13).

The following guidelines in the use of resources were drawn:

a) Public funds can only be used for health services in the Basic Health Care Package[25]

[24] Cost-recovery refers to methods used by providers to mobilise resources from or on behalf of patients for services that are outside the Basic Health Care package. At a minimum, these methods should lead to full coverage of costs of service provision. Cost-sharing involves mobilisation of such resources to contribute towards financing of services in the health care package. This Health Package includes services at the first contact, first referral, second referral and third referral levels. (MOH, 1998)

[25] SHI falls within the cluster of public funds and would therefore also be expected to support the package. But since workers will be contributing their 'private' funds, means should be sort of allowing some funds to be spent on services that are outside the package. This would make SHI attractive.

b) Private funds can be used to contribute to the cost of services in the package (cost-sharing)

c) Only private funds can be used for cost-recovery i.e. for services that are outside of the package

Guidelines for exemptions were also drawn and these were decided on the basis of poverty, age and level of income of patients, Other than that, exemptions could also be effected when it was imperative to promote use of specific services with important public health benefits.

3.0.5 Legal Framework for Financing Health Services

The National Health Services Act cap 315, 1996 provides the basis upon which the current financing policies are based (MOH, 1998)

3.0.6 Institutional Framework for Financing Health Services

The institutional framework is based on the concept of commissioning. This implies that funds from either the CBoH or a sub-commissioning District Health Board are allocated to accredited[26] service providers as part of a contractual agreement for the provision of health services. Only those health centres that are accredited provide health services to the public on behalf of the MOH, and only those services specified in the Zambian package of health care are included (MOH, 2000)

3.0.7 Is there a place for SHI in Zambia?

A starting point would be to ask the question of how well these health reforms have performed and how people for whom they were intended were affected. One issue around which there is much debate is how efficiently health services are being delivered. This depends to a large extent on the efficiency of health care financing. An examination of trends in health care financing will provide this information. Bennett and Ngalande-Banda (1994) assert that efficiency has been hampered because of little scope for reallocation of resources in favour of more cost-effective services.[27]

[26] Accreditation is a systematic process of measuring organisational performance to enable the process of contracting health services to link funding to recognised standards (MOH, 1998)

[27] Evaluating the efficiency of health care financing requires a comprehensive study of the health sector and is therefore not addressed adequately in this paper.

Another evaluatory issue is whether access to quality health services is equitable or not. Household or consumer seeking behaviour is a major indicator of whether or not the goals of equity in financing have been realised (PHR, 1997).

Zambia's health system is predominantly publicly funded. A review of public expenditure on health in Zambia between 1980 and 1997 shows that real per capita health spending by government declined in the period (see Table 3.1 below). This is a reflection of the country's poor economic performance. The situation is not so different for the period 1998 to 2001.

Table 3.1 - GRZ only health budget (MOH budget, including both recurrent and development, fixed 1995 prices. Total budget in million Kwacha, per capita Kwacha and USD)

Year	1980	1985	1990	1991	1992
Budget	95,887	80,599	41,755	61,792	38,378
PC ZK	16,936	12,114	5,341	7,643	4,589
PC US$	18.8	13.5	5.9	8.5	5.1
Year	1993	1994	1995	1996	1997
Budget	39,931	57,127	55,658	39,068	36,414
PC ZK	4,615	8,293	5,989	4,060	3,654
PC US$	5.1	9.2	6.7	3.7	2.8

(Source: draft National Health Strategic Plan 1998-2000, April 1998)

In Zambia as for the rest of Sub-Saharan Africa, user fees have been seen as a barrier to seeking health care. Bennet and Ngalande-Banda (1994) contend that people's reaction to introduction of user fees is as economic theory predicts: they reduce their consumption of health care services if the service remains unchanged.[28] According to the Strategic Plan of the MOH (2000), other barriers to access of health care include distance, perceptions of quality (such as drug availability or staff attitude) and the cost of care. Of these, however, economic analyses such as those of Diops et al (1994) and PHR (1997) have concluded that distance or proximity is the most important aspect. Whatever the level of user fees charged at any given institution, the probability of health services being demanded diminishes with the distance at which the potential

[28] It is however pointed out that the income from user fees can provide supplementary finance, especially for running costs as lower level health facilities. This is despite the fact that such income is likely to be small in relation to total health expenditure.

clientele are located. This highlights the fact that user fees are only one cost among many.

Deficiencies have also been identified in the Prepayment scheme. By 1997, 49 percent of those participating in the scheme for care at government clinics or health centres were from the highest income quintile. Surprisingly, they constitute the lowest proportion of individuals paying user fees directly out of pocket. On the other hand, the poor make proportionately higher contributions to user fees. Less than 12 percent of the sick in the lowest income quintile participate in the clinic/health centre scheme (PHR, 1997) On the whole, however, prepayment schemes have the potential to improve social differentiation in the access to health care, but only if they can be improved.

One message from the synopsis of the performance of the health sector, and in particular, of health care financing mechanisms, in Zambia is clear: there is need to explore more methods of raising revenue for the health sector including SHI. The other message is that there is need to have a more equitable health financing mechanism.

Government's position on (Social) Health Insurance was that this financing mechanism "...shall be introduced to provide a stable source of revenue for the delivery of health care in Zambia, and to promote equity in the provision of basic health care"(National Health Policies and Strategies, 1991: 44). It was proposed that an urban scheme for salaried and self –employed workers and their dependents be established. A specified percentage was to be levied on salaried workers while the self-employed were to be subjected to a flat rate. Different schemes were to be introduced for salaried and self-employed workers in the rural areas as well. What was however not clear in the policy framework was whether there would be cross-subsidisation of the uninsured by the insured and if so, how government would implement this equity-promoting plan. Cross-subsidisation would allow government to transfer funds that would have, in the absence of health insurance, been normally spent on the now insured to those that are not covered by the scheme. Only then would equity be ensured. It was further envisaged that health insurance would encourage a balanced public/private mix in the development of health insurance. To

be included in the package of services under health insurance were ambulatory and in-patient health care, preventive, curative and rehabilitative services. It was also pointed out that incentives were to be introduced to attract clients as well as a long-term measure aimed at encouraging health promotion and disease prevention services (ibid: 44).

3.0.8 Past Attempts at Health Insurance in Zambia

At present, health insurance, as described in the national policies, has not taken root in Zambia. What exist are pockets of private insurance schemes taken out with certain insurance companies as well as prepayment schemes in most hospitals in the country. These are examined below.

The Zambia State Insurance Corporation (ZSIC), which is the biggest, and only state-controlled insurance company in Zambia, did market research on the viability of introducing a Health Insurance scheme in the country in 1996/97. The results of the survey revealed that there was need for the existence of an efficient health insurance market in the country. This was more so because of an environment in which government had indicated its intentions to significantly reduce the extent of public sector funding. Also referred to as "Medical Expenses Insurance", Health Insurance was presented as an alternative method of financing health care especially in the face of the economic difficulties that were as a result of the implementation of the Structural Adjustment Programme (SAP) (ZSIC, 1997: 3-7). These findings were obtained from questionnaires administered to medical institutions, corporate entities and private individuals (both formally and informally employed). The final report recommended, however, that initially, a pilot scheme be started in three cities (Lusaka, Kitwe and Ndola) with the hope of spreading the scheme to other areas of the country.[29]

Zambia has however had employer-based health insurance schemes where group insurance is established around employers. Employees can seek medical care from prescribed health practioners and the employer covers the whole (or part of the) cost.

[29] A check with ZSIC in 2002 revealed that the scheme never took off at all. A major reason advanced for this failure was that there were inadequate statistics and information to guide the implementation of the scheme. Also cited was the realisation that the legacy of free medical help was killing the Insurance initiative.

Certain times, the insurance agency takes a non-profit employee-cooperative approach (Bennett and Ngalande-Banda, 1994).

Health insurance policies are also underwritten by some insurance companies. An example of such a plan is the 'Global Medical Treatment Policy' guaranteed by Madison Health Insurance (MHi). The policy, which is tailored for people travelling outside Zambia, insurers the holders against any bodily injury, sickness or death (MHi, 2000)[30].

3.0.9 The Formal Sector in Zambia

The feasibility of implementing SHI depends on the existing socio-economic conditions of the targeted population (Normand et al 1994). Korte et al (1992: 8) also submits that the implementing of SHI should be done with considerable caution and that "the development of such schemes is closely tied to the extension of the formal sector e.g. the creation of more employment opportunities." An assessment of the formal sector in Zambia is done below.

3.0.9.1 Employment by sector

By the year 2000, the employment level in the formal sector was projected to be at 460, 260 (about 4.5 % of total population). Since 1997, the employment levels for the whole sector have been declining. Especially hit are the parastatal and Government sectors, which have been affected by the public sector reform programme and the privatisation exercise. The private sector is the largest sector in Zambia, in terms of employment levels. Estimates show that up to 57.5 percent of all formal sector employees are in this segment. It is important to point out, however, that most of the small-scale enterprises are found in this sector (CSO, 2000). The Central Government is the second largest employer in Zambia, making up about 25.1 percent of the formal sector labour force. In the year 2000, the number of employees in this area was estimated to be around 101, 463. The parastatal sector is made up of all companies in which government has a controlling share and all statutory bodies (Ibid: 2). Beginning from end of June 1995, the parastatal sector became the third, and not the second,

[30] MHi pays the holder or legal representative specified compensation if any of the events specified in the scope of cover occur.

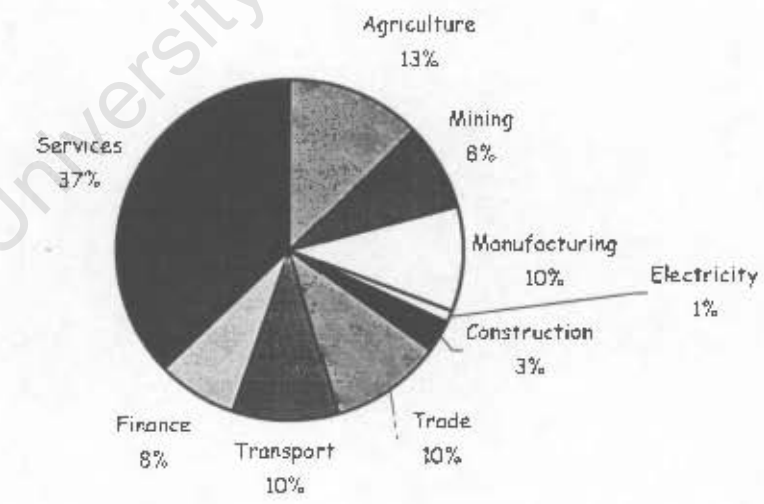
largest employer in the economy. In addition to the privatisation programme, this reduction was also as a consequence of liquidations in many establishments. By end of 1999, the sector had 56, 400 employees.

For 2002, however, formal employment levels were projected at 472, 500 implying an unprecedented increase in the working population (CSO interview). Job increases were mainly attributed to expected increases in foreign investment.

3.0.9.2 Employment by industry

Employment levels for the nine categories of the formal employment sector are presented in Figure 3.1 below. The Services industry is the largest in this group followed by the Agriculture, Trade and then Manufacturing segments. This information gives an idea of how the benefits from SHI would be shared among the industries.

Figure 3.1 Employment by Industry

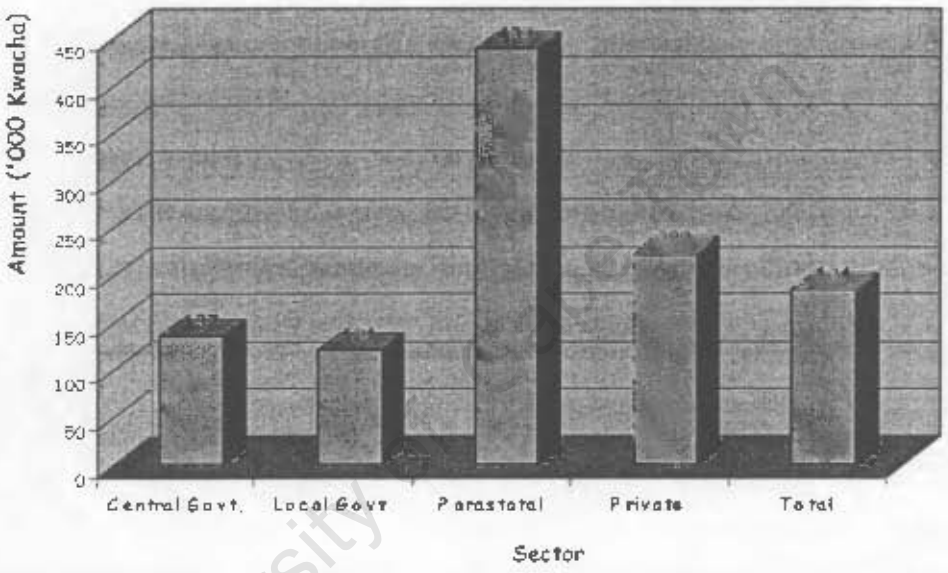


Source: Quarterly employment and Earnings Inquiry, CSO (2000)

3.0.9.3 Earnings by sector

Figure 3.2 below shows the average earnings of employees in the 4 categories of formal employment, as grouped by CSO. Data on remuneration of employees sheds some light on their ability to pay. This information would guide policy makers in determining the level of premiums to be paid by employees. It should be borne in mind, however that there would be a contribution from employers as well.

Figure 3.2 Average earnings by sector ('000 Kwacha)



Source: Quarterly employment and Earnings Inquiry, CSO (2000)

3.1 Summary and key messages from this chapter

- Zambia's macroeconomic decline can be traced from the time of independence. This decline has led to a number of economic reforms such as promotion of health care as close to the family as possible. In terms of health financing reforms, government has emphasised increasing budgetary contributions, budgetary reform and increased efficiency and lastly cost sharing. Implementation of SHI would therefore have to fit within these broad objectives.

- Failure of previous attempts at health insurance in the country has underlined the need for increased government involvement, at least in facilitation stage. A lack of sufficient preparation before implementation as well as inadequate understanding health insurance was also party to the failure.

- Overall, the unsatisfactory performance of the Zambian health sector has highlighted the need for financing alternatives to user fees and prepayment schemes. It therefore seems logical that initially, SHI be considered for the formal sector despite the fact that the latter makes up only 4.5 % of the total population. What should be noted however is that a large proportion of the population of the country is actually supported by the formally employed and SHI would consequently cater for more than 4.5 % of the populace. It cannot be overemphasised that for SHI to work, there has to be cross-subsidisation of the poor by the rich and of the sick by the healthy. This is consistent with the norms of a humane society with a high level of social solidarity.

- The average earnings for the parastatals were at least twice as much as those in the private sector, local or central government. Such discrepancies should therefore be considered in the design process of SHI.

- It has come to the fore that many problems relate to poor performance of the economy. In addition, if SHI is to work, there is need to cultivate a sense of social solidarity even in the wake of capitalist policies sponsored by the IMF and the World Bank. Further, it is clear that the policies of cost-containment still need a little more input from government if the desired results have to be achieved.

- Limited success of past attempts at health insurance in Zambia, notably employer based insurance schemes; only give hope as to the workability of the financing mechanism in the country as long as previous mistakes can be corrected. Prominent among the setbacks was inadequate preparation in terms of information and statistics before implementation as well as the negative effects of the legacy of free medical health care.

CHAPTER FOUR

4.0 CONCEPTUAL FRAMEWORK

This chapter discusses the way the analysis of the study is modelled, given the literature review in Chapter two. The reasons behind the choice of model used are also discussed.

The model specification is based on traditional economic theory that assumes that households are rational (Lipsey and Chrystal, 1999). Households endeavour to maximise their utility or satisfaction from consumption of any given goods, subject to their budget constraint. In the case of health services market, however, it is critical to note that demand for health products is *derived demand*, implying that health is demanded not just for its sake but to enable households to carry out certain rewarding activities such as participation in the labour market (Wagstaff, 1987).

4.0.1 Model specification

We let W (.) be the indirect utility function of a respondent with Y_i being his income. The other determinants are the unique features of SHI attributable to its design and nature (UF_i) and a vector of other socio-economic, demographic and health arguments of potential SHI scheme members (Z) (UNDP, 1996)[31]. MAXWTP is the maximum amount an individual is WTP for SHI.

A change in features of a particular SHI scheme (from UF_0 to UF_1) would change the utility function from $W_0 = W_0 (Y_0, UF_0, Z)$ to $W_1 = W_1 (Y_0 - MAXWTP, UF_1, Z)$. Given this scenario, the respondent's WTP given changes in expected payoffs is derived from his/her indifference between the following two utility functions:

$W_1 (Y_0 - MAXWTP, UF_0, Z) = W_0 (Y_0, UF_0, Z)$ 4.1

Assuming that SHI would bring about an improvement in quality of health services delivered, we would say that an individual's WTP would be a function of the change in UF_i and of Y_i and Z (Ibid). Algebraically:

$WTP = f (UF_i, Y_i, Z)$ 4.2

4.0.1.1 Options for Regression Models

There are two decisions that respondents were asked to make. The first one was to state whether or not they would be WTP for SHI and, if they were, the second was to volunteer an amount that they would be WTP. Given that a hypothetical market of SHI was presented to employees to whom it was explained that SHI entailed a certain percentage of their salaries being cut as a payment towards the scheme, it is safe to assume that those that were WTP for SHI were also in favour of the policy. Therefore this study does not make a distinction between WTP and being in favour of the policy.

In analysing the relationship between a dichotomous dependent variable and independent variables, any one of following four different types of regression models could have been used:

1) Linear Probability Model (LPM)[32]
2) Binary Logit Model (BLM)[33]
3) Binary Probit Model (BPM)[34] and
4) Complementary Log-log Model (CLLM).[35]

[31] This is an interesting analysis of households' WTP for improved sanitation in Kumasi, Ghana. See Grossman (1972) and Gertler at al (1987) also for modelling of choice of health care by individual consumers

[32] The LPM has been used in examining labour-force participation of various categories of labour as a function of several socio-economic-demographic variables (Cohen et al, 1970)

[33] In Dietrich and Sorenson (1984: 393-402), the Binary Logit Model was employed to predict that a given firm would be a merger target.

[34] Nakamura and Nakamura (1981: 464-468) used the Binary Probit Model to analyse labour force participation in the United States and Canada

[35] This model was used by Prentice and Gloeckler (1978) to model the interval-censored survival times.

These methods were therefore available for use in analysing the relationships between WTP and its determinants. The LPM was not used for this study because of its four fundamental limitations (Long, 1997)[36].

Some WTP studies such as UNDP (1996) use the BPM while others such as Ellis and Mwabu (1990)[37] use the BLM. But the choice between the BLM and the BPM is merely a matter of choice and convenience (Gujarati, 1995)

Complementary log-log models represent a third alternative to BLM regression and BPM analysis for binary response variables. Complementary log-log models are frequently used when the probability of an event is very small or very large (McCullagh and Nelder, 1983). The probability of employees being WTP or not has been assumed to be indeterminate in this study, hence the unsuitability of the CLLM.

As a consequence, a BLM was used to model WTP and its determinants.

It is important to note here that only those that were WTP volunteered an (observed) MAXWTP amount that they would pay for both inpatient and outpatient services from any provider of hospital care. The responses from those that were not WTP (unobserved) were set to zero. The decision process can be depicted as follows:

WTP?	MAXWTP Amount
Yes (= 1)	Observed MAXWTP amount
No (=0)	Unobserved MAXWTP amount

[36] These are (a) Non-normality of the error term (b) Possibility that the conditional probability of the dependent variable might not be in the 0-1 range (c) Heteroscedasticity of the error term and (d) Generally lower R-squared values. See Long (1997) and Gujarati (1995)

[37] The focus was on the determinants of Demand for Outpatient Medical Care in Rural Kenya

Therefore, a BLM for WTP is implicitly a regression that predicts the log of positive MAXWTP amounts i.e. the probability of obtaining positive (observed) MAXWTP amounts.

In analysing the relation between a single response dependent variable and its explanatory variables, there is a choice of linear and non-linear regression models. Two such models are the simple OLS regression model (Bertrand et al, 2001[38] and Dornbush and Fischer, 1984[39]) and the Log Linear (LL) regression model (Maluccio et al, 2000,[40] Leibbrandt and Woolard, 2001[41] and Muheki, 1998[42]).

To analyse the relationship between the maximum amount that respondents were WTP (MAXWTP) and the independent variables, the portfolio of probable regression models included OLS and LL.

Analysis using either of the two models would be fine, in fact, if the unobserved (zero-rated) MAXWTP data were obtained completely at random (STATA manual, 1996). But this is not so. Given the hypothetical market situation they were presented with, respondents first had to make a decision about whether or not they were WTP for SHI. Only those that were WTP volunteered an observed positive MAXWTP amount that they would be WTP for both inpatient and outpatient services from any source of hospital care. Those that were not WTP had their MAXWTP figures set to zero. In this study, 146 of the original 293 were WTP.[43]

If this censored sample criterion is not accounted for, it is possible that we would overestimate the MAXWTP that respondents were WTP.

[38] Examined in this study was the effect of old age pension income on working hours and employment status of 16 to 50 year old Africans

[39] Reference is made to the analysis of the Expectations-Augmented Phillips Curve for the United States, 1970-1982

[40] Maluccio et al (2000) explored the determinants of logarithmic per capita expenditure in a study of Social Capital and Household Welfare in South Africa, 1993-98

[41] The log-linear regression model was used to analyse the determinants of change in the natural log of adult equivalent income in South Africa.

[42] This was a study to determine the variables that explained the maximum amount employees were WTP for SHI in Kampala, Uganda

[43] It may be important at this point to indicate that 4 of the 146 did not volunteer any MAXWTP amount and were thus not included amongst those that volunteered positive amounts.

To take care of the censoring that takes place, this study uses the Tobit model.[44]

As a consequence, a two-stage regression approach was taken in this study. The first regression model is a BLM for WTP and the second is the Tobit model for the MAXWTP amount. Two forms of results are rendered for each of the regression models: (i) One for an entire list of explanatory variables (specified as "E") and (ii) one for a limited number of explanatory variables (specified as "L"). This was done to test the sensitivity of the regression results to alternative model specifications. A discussion of how model re-specifications affected the regression results is done in 6.10

4.0.1.2 BLM for WTP

An individual's WTP for SHI is dependent on factors given in equation (4.2) above. To determine what elements influence the probability of whether an individual will be WTP or not, we use a *logistic regression* equation, given as

$$P(WTP=1) = 1/(1+e^{-WTP}) \quad \text{.....4.3}$$

Where WTP = Willingness to Pay (WTP) for SHI, equal to 1 if an individual is WTP and 0 otherwise.

P (WTP=1) is the probability that an individual is WTP for SHI.

The logistic equation has the dependent variable presented as log of odds (L_i) of P (WTP=1):

$$L_i = \ln(P_i / 1 - P_i) \quad \text{.....4.4}$$

[44] Another model that could have been used is the Heckman Selection model, which is which is a two-equation model (Heckman 1979, Breen 1996). But the presence of zeros in the dependent variable as well as collinearity made this model not particularly suitable. In addition, the error term was insignificant implying that some dependent variables that influenced selection were not captured in the model.

Where In is the natural log (i.e. log to the base e with e = 2.718)

Finally, the logistic equation is then given as:

$$L_i = f(UF_i, Y_i, Z) \quad \text{.....4.5}$$

Where UF_i, Y_i and Z are again as defined in (4.1) and (4.2) above (Ibid).

4.0.1.3 Tobit model for MAXWTP or Y_{max}

The maximum amount that an employee would be WTP for SHI (Y_{max} or MAXWTP) can be expressed as the following function:

$$Y_{max} = y(UF_i, V) \quad \text{.....4.6}$$

With V being a vector of variables that explain Y_{max} (MAXWTP) and UF_i being defined as before.

In the BLM, we first model the probability that an individual is WTP i.e. WTP=1. In the Tobit, we then model the expected MAXWTP amount (Y_{max}) given that an individual is WTP. We therefore are dealing with a Censored Sample Problem. This is because for values of Y_{max}, we know the exact value of Ymax if Ymax > 0. This is because all values of Ymax for which WTP ≠ 1 were considered to be zero. As a consequence, Ymax is truncated with a threshold of c = 0 and the sample is left-censored.

The expected value of a random variable say, j, can be expressed as the sum of the products of the probability of j falling into any one of the sets of disjoint intervals and the expected value of j in that interval (Breen, 1996)

Algebraically, we have

$$E(j) = \sum pr(j \in I_s)\, E(j \mid j \in I_s) \quad \text{.....4.7}$$

Where I_s (s = 1, 2, ...s) are the intervals.

Considering our censored sample and adopting (4.7), then we have

$$E(Y_{maxi} \mid V_i) = pr(Y_{maxi} > c \mid V_i)\, E(Y_{maxi} \mid Y_{maxi} > c, V_i) + pr(Y_{maxi} \leq c \mid V_i)\, E(Y_{maxi} \mid Y_{maxi} \leq c, V_i) \quad \text{.....4.8}$$

I_1 is the interval $(-\infty, c)$ and I_2 is the interval $(c, +\infty)$

If Y_{max} is dichotomised with respect to c, then (4.8) can be written as

$$E(Y_{maxi} \mid V_i) = pr(Y_{maxi} > c \mid V_i)\, E(Y_{maxi} \mid Y_{maxi} > c, V_i) + [1 - pr(Y_{maxi} > c \mid V_i)]\, E(Y_{maxi} \mid Y_{maxi} \leq c, V_i) \quad \text{.....4.9}$$

And if Y_{max} is truncated from below at the value c, then we have

$$E(Y_{maxi} \mid V_i) = pr(Y_{maxi} > c \mid V_i)\, E(Y_{maxi} \mid Y_{maxi} > c, V_i) + [1 - pr(Y_{maxi} > c \mid V_i)] \times c \quad \text{.....4.10}$$

Y_{maxi} is the observed MAXWTP amount that respondent 'i' is WTP and is only captured for $Y_{max} > 0$.

The unobserved MAXWTP amount is the latent or underlying variable and is denoted Y^*_{maxi} can be expressed as

$$Y^*_{maxi} = V_i' \beta + u_i$$

$$Y_{maxi} = Y^*_{maxi} \text{ if } Y^*_{maxi} > c$$

$$Y_{maxi} = c \text{ if } Y^*_{maxi} \leq c,$$

where c is the threshold for censoring and equal to 0

In terms of the observable variable Y_{maxi}, we have

$$Y_{maxi} = V_i' \beta + u_i \quad \text{if } Y_{maxi} > c$$

$$Y_{maxi} = 0 \text{ otherwise}$$

And if c=0 then (4.10) becomes

$$E(Y_{maxi} \mid V_i) = pr(Y_{maxi} > c \mid V_i)\, E(Y_{maxi} \mid Y_{maxi} > c, V_i) \quad \text{.....4.11}$$

The estimates calculated for all the parameters in the Tobit model are more accurate when there is censored sample problem. Studies that have utilized this model include Honahan and Nolan (1993).[45]

4.0.2 Model assumptions

The following assumptions were considered for both models:

1. The log of odds in favour of WTP for SHI in the Logistic regression model (i.e. the ratio of the probability that a respondents is WTP for SHI to the probability that he is not) is linearly related to the independent variables (UF_i, Y_i and Z) and the parameters.

2. The error term of the underlying or latent regression model in the Tobit regression model (the Y^*_{max} equation) is independent and normally distributed with mean equal to zero and a constant variance equal to δ^2.

[45] Examined in this study was the effect of 7 explanatory variables on the percentage share of financial assets in the total wealth of households in the Republic of Ireland.

In addition,

3. Employees are risk averse.

4. Employees are rational consumers and their decision of whether or not to be covered by SHI will be contingent on the expected benefits or outcomes from belonging to such a scheme.

5. The socio-economic, demographic and health characteristics of potential SHI scheme members as well as the design of a particular SHI scheme will influence their decision of which alternative to go for (i.e. being covered or not being covered by SHI) and the maximum amount to be paid.

4.0.3 Variables

4.0.3.1 Dependent variables

The dependent variables are two:

First is L_i, which is the log of odds of the probability of an individual being WTP for SHI.

The second one is the MAXWTP amount i.e. Y_{max}. This is the highest or maximum amount of money that an individual is WTP per month towards a SHI scheme. This amount assumes that both outpatient and inpatient services, as well as an employee's entire family, are catered for.

4.0.3.2 Independent Variables

Table 4.1 presents the independent variables used in the study.

Table 4.1 Independent Variables

Variable	Description	Expected Sign
Respondents' characteristics		
Gend	Gender, 1 if male and 2 if female	- if male, + if Female
Res	Respondent's Residential Status	+ if high dens, - otherwise
Hhsize	Respondent's Household Size	+
Mar	Respondent's Marital Status	+ if married, - otherwise
Age	Respondent's Age	+
educn	Level of education	+ if above secondary school, - otherwise
Employment details		
Domain	1 if Public sector and 2 if Private sector	+ if public sector, - if private
exprnce	Period in present employment	+
Earn	Amount earned in prev. year from employment	+
salary	Respondent's Monthly Salary	+
earnothe	Amount earned in prev. year from other sources	+
prov	Does employer provide benefits for sick employees?	- if yes, + if no
Kind	Kind of benefits from employer	?
Health practices		
prpay	Whether any hhd member belongs to prepayment scheme	+ if yes, - if No
servc	Services prepayment scheme covers	+ if both outpatient & inpatient, - otherwise
Sic	Whether any hhd member has been sick in prev month	+ if yes, - if no
medc	Source of medical care	+ if public hospital, - if private hospital
ymedc	Why particular source of med care was chosen	?
pay	Who paid medical bill	+ if out of pocket, - otherwise
mnexp	Monthly expenditure on Health	+
Qlty1	Quality of health care in public hospitals	+ if poor or very poor, - otherwise
Reas1	Reason for quality of health care in public hospitals	?
Qlty2	Quality of health care in private hospitals	+ if poor or very poor, - otherwise
Reas2	Reason for quality of health care in private hospitals	?
SHI contingency valuation responses		
WTJ	Willingness to join SHI, 1 if yes and 2 if No	+ if WTP, - if not
rwtp	Reason for Willingness to pay	?
Cov1	Services desired under SHI	+ if both outpatient & inpatient services, - otherwise
Cov2	Who SHI is to cover	+ if all members of hhd, - otherwise
run	Who should run the SHI fund	+ if autonomous, - otherwise
maxpub	Max contribution if public hospital	+
lose	Sacrifice consumption bundle due to SHI?	- if yes, = if no

CHAPTER FIVE

5.0 METHODOLOGY

In order to achieve the objectives outlined in section 3.0, the study utilised the following methods at various stages of the research:

a). Library research involving the review of both theoretical and empirical literature on SHI in particular, and Zambia's health sector in general. Of particular importance also was a review of Zambia's macroeconomic environment in which characteristics of the formal employment sector were highlighted.

b). A survey of formal employees and employers was conducted in order to obtain information on WTP using questionnaires (see 5.0.1 and Appendices 1 and 2 below).

c). Interviews with various personnel in the Ministry of Health (MOH), Central Board of Health (CBoH) and Insurance companies. Views were also sought from key personnel in international organisations such as the WHO and UNICEF.

5.0.1 Data Collection Instrument

Great care was taken in designing the questionnaires for the survey of formal employees and employers. The development of this instrument drew a lot from the work of Muheki (1998). The resultant questionnaires were pretested with 30 formally employed people and 5 employers. Comments on the questionnaire were also solicited from University of Zambia (UNZA) researchers and MOH personnel. The resultant responses from this first test and observations were used to improve upon the instrument.

There were thus two versions of questionnaires: one was administered to employees and the other to employers since both camps play a significant role in SHI.

The final survey questionnaire for employees had four parts: i) Identification of respondent ii) Socio-economic and demographic characteristics of respondents iii)

Past Health care practices, expenditures and attitudes of respondents and iv) Hypothetical SHI market and WTP questions.

That for employers had three parts: i) Background information of employer ii) Health seeking behaviour and attitudes and iii) Hypothetical SHI market and WTP questions

To measure WTP, the study utilised a Contingent Valuation method.

5.0.1.1 Concept of Contingent Valuation

The contingent valuation method (CV) is a survey research method that asks people hypothetical questions about their WTP for a particular programme or intervention. It assumes that respondents have had no previous experience of buying or using the health service or product that is going to be put on the market and instead asks people their WTP on the basis of their expectations (Russell et al., 1995). Since the health service and the circumstances under which the service or good is bought are hypothetical, the respondent must develop an answer based on the information or scenario provided by the interviewer. The CV method is consistent with social welfare theory as consumers are presumed to know the benefits and cost of what they choose to pay to maximise their welfare. It has been argued that the most obvious area in which to use the CV method in the health care sector is in studying prevention attitudes since prevention concerns risks and involves decisions that individuals have to make in everyday life; e.g. choice between the use of an insecticide treated bed net against mosquito bites (Johannesson and Jonsson, 1991)

The CV questions about WTP for SHI are presented in Appendices 1 and 2 of this study. The addition of close-ended questions on WTP in the questionnaires ensured that little room for misrepresentation of respondents' preferences existed.

5.0.1.2 Areas of Concern for the CV method

Obtaining reliable answers to a WTP survey depends on respondents fully understanding the hypothetical market the researcher describes to them. If there is insufficient information provided, then the WTP bids given will not be valid and it would not be wise to generalise them over a larger population, as they will not be representative.

Another cause for worry is when the respondent does not completely comprehend the information given about the hypothetical market. In this case, WTP bids given will not be accurate, as the complete picture will not have been captured.

Apart from ensuring that information about the hypothetical market is given as succinctly as possible, various tests of validity (see 6.13) can be conducted to make certain that respondents give dependable responses.

5.0.2 Sample Selection.

This study benefited from the publication of the *Quarterly Employment and Earnings Survey Report* by the Central Statistical Office (CSO, 2000) in which exhaustive information on the characteristics of the formal employment sector in Zambia is given. A national survey of all formerly employed workers would have been best but given the financial limitations during the study, only those in Lusaka were surveyed. It would be enriching, though, to have a national survey in which cities and towns with different demographic and economic characteristics to those of Lusaka are included. A group of 315 respondents segregated according to the observed patterns in the national employment survey were surveyed. This meant that 57.5[46] percent were to be from the private sector, 27.9 percent from the government and the remaining 14.6 from the parastatals. Additionally, about 69.6 percent of these workers are male.[47] Once these percentages were established, respondents were randomly selected from a listing of formal employment establishments in Lusaka obtained from the Patents and Companies Commission (PCC).

Respondents were visited at their offices and permission was first obtained from their employers or officers in charge. Because of time constraints, certain of these respondents rescheduled their questionnaire answering sessions to a later date. Out of a total sample of 315 respondents, 293 provided usable answers to the questions posed.

[46] In the final sample however, because of incomplete questionnaires, the share for the private sector came down to 52.9 %.

5.0.3 Unit of Analysis

Because two sets of questionnaires were utilised, the study ended up with two data sets from the survey: i) data on employees and ii) data on employers. The unit of analysis in the CV was every individual respondent. The interviewee's responses to the CV questions provided the data needed for analysis.

5.0.4 Interviews with Key Resource Persons

In addition, interviews were conducted with a six key resource persons. The purpose of these interviews was to get valuable qualitative data on the *desirability* and *feasibility* of SHI in Zambia. This information gives an insight into some of the policy issues around SHI. In determining the desirability of SHI, interviewees were answering two questions: is it equitable and is it efficient?[48] To address the issue of feasibility, the respondents dealt with the issue of whether or not there are means for SHI to be introduced and if yes, whether coverage could be expanded later on. The complete set of questions asked is presented in Appendix 3. Interviewees were picked on the basis of the their vast expertise and experience in health-related issues and SHI in particular. Among those interviewed were the Senior Planner in the Ministry of Health, Health Economist at the World Health Organisation (WHO), Deputy Managing Director for Zambia State Insurance Corporation (ZSIC), General Manager for Madison Health Insurance, Country Programme Advisor for UNAIDS, Deputy Chief of Party at Zambia Integrated Health Programme (ZIPH) and the Life Insurance Manager at ZSIC.

5.0.5 Limitations

- This research was conducted on a constrained budget. As a consequence, only employees in the capital city, Lusaka, were surveyed. It would have been interesting to get responses of employees and employers in places that have different demographic and socio-economic characteristics to those in Lusaka. The more encompassing and exhaustive a sample is, the more valid the generalisations made would be. Special care was however taken to make

[47] Central Government does not disaggregate their employees according to sex, but observation has shown that the sex distribution is roughly the same as that in Local Government.

[48] As already noted in 3.0.7 a proper assessment of efficiency would require going beyond interviews with key resource persons. Therefore only preliminary responses on efficiency were obtained from this exercise.

the sample as representative as possible in terms of public/private mix and gender, for instance.

- Another limitation linked to the one discussed above concerns the small sample size. Only 293 employees were sampled. The logistic and Tobit regression models utilise the Maximum Likelihood Estimation (MLE) method in arriving at estimates. Aldrich and Nelson (1984) submit that for small samples, the MLE properties of unbiasedness, efficiency and normality cannot be established for sample sizes less than N-K = 100 (where N is the number of observations and K is the number of independent variables). Though the sample size for this study falls above the accepted minimum, it is obvious that a bigger sample would have given more confidence when generalising the results to the whole population.
- Certain respondents believed that this study was immensely funded and therefore refused to answer any questions unless they were paid. In such circumstances, questionnaires were given to those sympathetic to the cause. The extent to which this sympathy affected responses is hard to know. Then there were others that did not answer certain questions that they considered to be 'sensitive'. Questionnaires in which valuable information was missing were discarded. In total 22 of the initial number of 315 questionnaires were discarded representing a non-response rate of 6.9 %
- The research was conducted in the rainy season and this made data collection difficult. The research team[49]however took advantage of all rain-free days to conduct as many interviews as possible.
- The Patents and Companies Commission (PCC) did not have up-to-date physical addresses of most of the private companies and this made research work even more demanding.
- Other limitations concern the plausibility and reliability of the results of the regression models that were run. This is more so considering the fact that that the research was based on survey data. Tests of the accuracy and dependability of the WTP results are presented in 6.13

[49] The researcher plus two research assistants

CHAPTER SIX

6.0 EMPIRICAL RESULTS FROM SURVEY AND DISCUSSION OF RESULTS

6.0.1 Introduction

This chapter presents the empirical results, as well as a discussion of the results, from the contingency valuation survey of public and private sector employees and employers in Lusaka.

6.1 Respondents' summary descriptive statistics

Table 6.1 below shows the descriptive summary statistics of the surveyed employees in the two strata that have been considered for our study (i.e. public and private sectors).

Table 6.1 Summary Descriptions of surveyed population

Respondents' characteristics	n	(% of total sample)
Gender		
Male	204	(69.62)
Female	89	(30.38)
Age *[mean (standard deviation)]*	33.6	(7.71)
Marital status		
Single	84	(28.67)
Married	182	(62.12)
Divorced	10	(3.41)
Widowed	17	(5.80)
Level of education		
Degree	41	(13.99)
Diploma	146	(49.83)
Secondary	95	(32.42)
Primary	10	(3.41)
None	1	(0.34)

Table 6.1 Summary Descriptions of surveyed population (contd)

Household Characteristics		
Household size *[mean (standard deviation)*	5.86	(2.71)
Composition of households ((n only)		
Females aged 0 to 5	99	-
Females aged 6 to 15	170	-
Females aged 16 to 39	248	-
Females aged 40 & above	45	-
Males aged 0 to 5	91	-
Males aged 6 to 15	143	-
Males aged 16 to 39	236	-
Males aged 40 and above	81	-
Residential status		
Low density urban area	55	(18.77)
Medium density urban area	100	(34.13)
High density urban area	125	(42.66)
Settlement	10	(3.41)
Rural	2	(0.68)
Other	1	(0.34)

Health Practices		
Has any household member been sick in previous month?		
Yes	200	(68.26)
No	93	(31.74)
Source of medical care for sick household member		
Private clinic	152	(51.88)
Public hospital/clinic	125	(42.66)
Traditional Healer	1	(0.34)
Private, public hospital & traditional healer	3	(1.02)
Just bought drugs	10	(3.41)
Didn't seek medical care	2	(0.68)
Why was source of medical care chosen?		
Respondent has prepayment scheme or employer pays	116	(39.59)
Better services (doctors, equipment, drugs)	62	(21.16)
Affordability	85	(29.01)
Proximity	22	(7.51)
Nature of illness	8	(2.73)

Table 6.1 Summary Descriptions of surveyed population (contd)

Who paid medical bill		
Out of pocket	239	(81.57)
Employer pays	23	(7.85)
Medical insurance	27	(9.22)
Out of Pocket & employer pays	2	(0.68)
No payment	2	(0.68)
Monthly expenditure on health care in K '000 [mean (standard deviation)]	59	(150)
Is any member of household a member of prepayment scheme?		
Yes	142	(48.46)
No	151	(51.54)
Medical services prepayment scheme covers		
Free drugs	174	(59.39)
Free consultation	45	(15.36)
Free hospital care	20	(6.83)
Free drugs & consultation	5	(1.71)
Free consultation & hospital care	4	(1.37)
Free drugs, consultation & hosp care	4	(1.37)
Free referrals, drugs, consultations & Hospital care	5	(1.71)
Life insurance	1	(0.34)
Other	35	(11.95)
5		
Membership fee for prepayment scheme in K '000 [mean (standard deviation)]	52	(354)
Perception on quality of health care in government hospitals		
Excellent	1	(0.34)
Good	19	(6.48)
Average	79	(26.96)
Poor	125	(42.66)
Very poor	69	(23.55)
Reason for perceived quality of health care in government hospitals		
Non-availability of drugs/inadequate funds	153	(52.22)
Bad personnel attitudes (no care)	33	(11.26)
Non availability of drugs & bad attitude	76	(25.94)
Congestion	2	(0.68)
Quick, caring & efficient	9	(3.07)
Too expensive	5	(1.71)
Availability of drugs	1	(0.34)
Affordability	14	(4.78)

Table 6.1 Summary Descriptions of surveyed population (contd)

Perception on quality of health care in private hospitals		
Excellent	39	(13.31)
Good	179	(61.09)
Average	57	(19.45)
Poor	12	(4.10)
Very poor	6	(2.05)
Reason for perceived quality of health care in private hospitals		
Non-availability of drugs/inadequate funds	21	(7.17)
Bad personnel attitudes (no care)	3	(1.02)
Non availability of drugs & bad attitude	1	(0.34)
Services don't match fees	43	(14.68)
Too expensive	6	(2.05)
Quick, caring & efficient	129	(44.03)
Availability of drugs	90	(30.72)
Employment Details		
Strata		
Public sector	138	(47.10)
Private sector	155	(52.90)
Period spent in current job [mean (std dev)]	6.87	(6.45)
How much respondent earned in previous year in K '000 [mean (standard deviation.)]	464	(691)
Monthly salary in K '000 [mean (std dev)]	456	(373)
Does employer provides benefits for sick employees?		
Yes	117	(39.93)
No	176	(60.07)
Type of employer benefits if yes		
Employer has contracted doctor	196	(66.89)
Employer has contracted hospital/clinic	16	(5.46)
Firm has clinic on premises	14	(4.78)
Workers claim med. costs incurred	36	(12.29)
Medical allowance	20	(6.83)
Employer has contracted doctor, clinic and clinic is on the premises	5	(1.71)
Medical scheme	2	(0.68)
Salary advance	4	(1.37)

Table 6.1 Summary Descriptions of surveyed population (contd)

Questions on SHI		
Endorsement of SHI? (WTP for SHI)		
Yes	146	(49.82)
No	91	(31.05)
Undecided	56	(19.11)
Reason for endorsing SHI		
Policy has worked in Zambia before	2	(0.68)
SHI indemnifies against unprecedented Illness	81	(27.60)
Affordable, unlike lump sum payments	9	(3.07)
Worth trying but needs more information	15	(5.12)
Enhances health status & productivity	12	(4.10)
Don't understand policy	2	(0.68)
Reasons for not endorsing SHI		
Policy has worked in Zambia before	6	(2.05)
Zambians are overtaxed	25	(8.53)
Doubt workability/don't understand policy	27	(9.22)
Would bring about congestion	1	(0.34)
Adverse Selection	5	(1.71)
Duplication, employees already contributing	4	(1.36)
Doubt Govt. accountability	23	(7.85)
Monthly % SHI Premium per employee [mean (standard deviation)]	9.84	(10.35)
Maximum WTP if hospital if public in K '000 [mean (standard deviation)]	15.5	(15.80)
Maximum WTP if hospital if private in K '000 [mean (standard deviation)]	23.3	(21.10)
Maximum WTP if hospital is either public or private in K '000 [mean (standard deviation)]	26.6	(28.10)
Services desired under SHI		
Outpatient services only	2	(0.68)
Inpatient services only	2	(0.68)
Both outpatient & inpatient services	141	(48.12)
Specialised hospital services	1	(0.34)

Table 6.1 Summary Descriptions of surveyed population (contd)

Preferences for SHI coverage		
Respondent only	4	(1.36)
Respondent and spouse	2	(0.68)
Respondent, spouse & children	111	(37.88)
Respondent, spouse, children & all Members of household	29	(9.90)
Who should run SHI fund		
Government	59	(20.14)
Autonomous fund	80	(27.30)
Any other reliable board	7	(2.39)
Would SHI contribution lead to sacrificing any part of consumption bundle?		
Yes	97	(33.11)
No	49	(16.72)

6.2 How many approve of SHI? What is the number that is WTP?

A total of 293 employees were surveyed, 138 from the public sector and 155 from the private sector. Of the 293 workers, 146 or 49.83 % of the whole sample endorsed the idea of government implementing SHI while 91 or 31.06 % of the whole sample did not. The rest were undecided.

On the basis of those that unequivocally said they were in favour of SHI and therefore WTP for it, one would conclude that less that half of the employee population was WTP for SHI and that the rest were not. But it is important to note here that there is another group of 56 employees or 19.1 % that were undecided. Three quarters of this group of undecided employees said they either did not fully understand the policy or doubted its workability. Furthermore, another 31% of those that were not WTP also expressed a lack of understanding of the policy. Based on these answers, therefore one can assume that the number of employees that would be WTP could be much larger than this survey revealed if there was more understanding of how SHI works.

Of the 146 that endorsed the policy, 45.89 % were drawn from the public sector while the rest were from the private sector. Almost equal numbers of public sector and

private sector employees said they did not feel SHI was a good policy (50.5 % and 49.5 %, respectively).

55.36 % of the 56 workers that were neither for nor against SHI (i.e. neutral) were from the private sector with the public sector making up 44.64 %.

Of the 146 that endorsed SHI, 142 (97.3 %) indicated their WTP amounts while 4 (2.7 %) did not volunteer figures. 63 of the 142 or 44.4 % were public sector employees while the rest (79 or 55.6 %) were from the private sector. So ultimately, 48 % of the original sample of 293 was WTP for SHI.

6.3 How much are employees WTP?

The average amounts that employees were WTP for SHI have been divided according to the providers of medical care as indicated in Figure 6.1 below.

Respondents were asked to state how much they would be WTP for SHI given different providers of medical care. The three sources that were considered were public hospitals, private hospitals and a combination of the two. The other source of medical care in Zambia is mission hospitals but these are mostly located in rural areas. Since respondents were from Lusaka (an urban area), very few people could answer questions about WTP if the medical-care provider was a mission hospital. As a consequence, WTP amounts for mission hospitals were not considered. From Figure 6.1 below, the average amount that respondents were WTP per month for SHI if the supplier of medical care was a public hospital (maxpub) was K15, 751 [3.96 % (3.10 %) of monthly salary in public sector (private sector)] and K23, 462 if from private hospitals (maxpriv). As a percentage of the respondents' monthly salary in the public and private sectors, this was 5.89 % and 4.62 %, respectively. If employees could be guaranteed treatment from both sources (maxpbprv) then they were WTP a higher figure of K26, 402 [6.63 and 5.20 % of monthly salary in the public and private sectors, respectively][50].

[50] At exchange rate prevailing at time of survey (K4, 010= US $1), maxpub was equivalent to US $3.93, maxpriv was US $5.85 and maxpbprv was US $6.58.

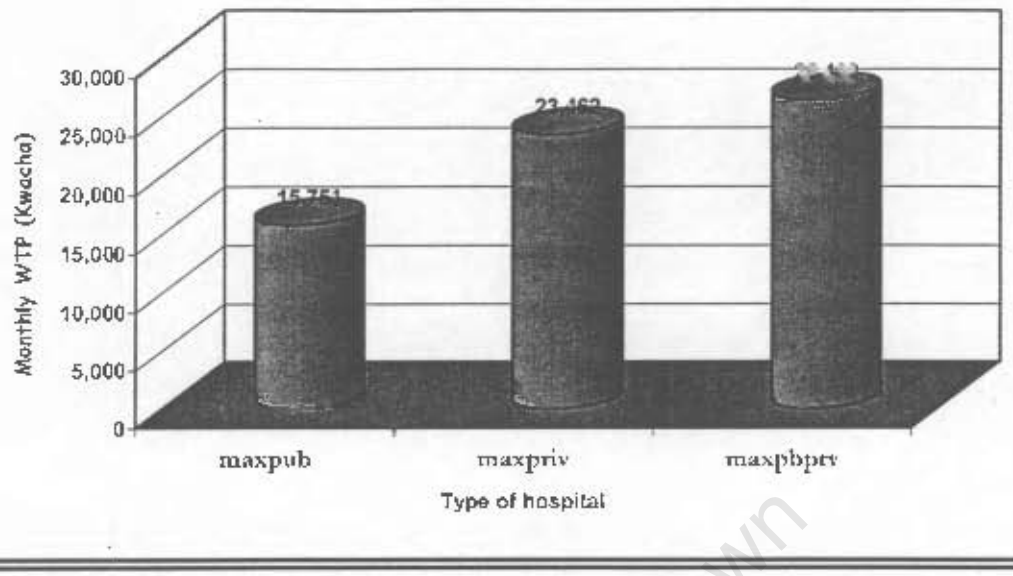
The WTP amounts were all above a quarter of K59, 014, which was respondents' average monthly expenditure on health care (mnexp) i.e. maxpub (26.7 % of mnexp), maxpriv (39.8 %) and maxpbprv (44.7%). An argument could be presented here that WTP figures are not reflective of what respondents are currently expending on health care and that these figures undervalue the real cost of health services. But it would be safe here to assume that employees that volunteered maximum WTP amounts understood that this was an insurance-market set-up that involves pooling of resources. It is understandable therefore that employees saw SHI as a funding method in which they would pay much less than they are presently spending and thereafter make a saving.[51]

It is evident that public hospitals are generally perceived to be of poor standards as shown in the value that people put on getting their services from these institutions. In fact, respondents that perceived services to be either poor or very poor in public hospitals were WTP only K14, 410 (US $3.59) if they were to get medical help from these hospitals. The figure was K16, 033 (US $4) if they graded such services as either excellent or good.

This explains why the majority of employees (51.88 %) indicated that they seek medical care from private providers. It is therefore clear that the role of private medical care providers cannot be ignored in the design process of SHI if consumers' prevailing predilections are considered to be important.

[51] A test for consistency of maximum WTP amounts in Section 6.13.5 shows how these amounts compare against individuals' monthly health expenditure when disaggregated according to source of medical care and type of services to be provided.

Figure 6.1 Mean monthly WTP amounts for various hospitals



Different hospital services registered varying WTP amounts, split again according to the supplier of health care. Table 6.2 below shows the mean WTP amounts according to hospital services provided and health care provider (type of hospital).

With the exception of the maximum WTP amounts for inpatient services sought from private hospitals and outpatient services also desired from private hospitals (K50, 000 apiece)[52], people were WTP more for each type of hospital service if they could be guaranteed access to both public and private institutions.[53] This is evident from the fact that the mean amounts respondents were WTP if they could seek medical help from both public and private hospitals, were higher for all types of services than those obtained when access would be ensured only from either public or private hospitals. A possible explanation for this is that respondents preferred not to be restricted with regards to the type of health care provider they would seek redress from in time of illness. Employees are WTP more for a wider choice of health provider.

[52] As a matter of fact, these two figures represent the response of only three people whose average earnings were way above that of the other respondents. These two figures are therefore not representative of the sample.

[53] The scope of services provided by public and private hospitals is generally the same. But these services normally differ in the cost and level of quality. The cost and level of quality are higher in the latter. In this vein, the public and private hospitals can be seen as providing 'complementary' services.

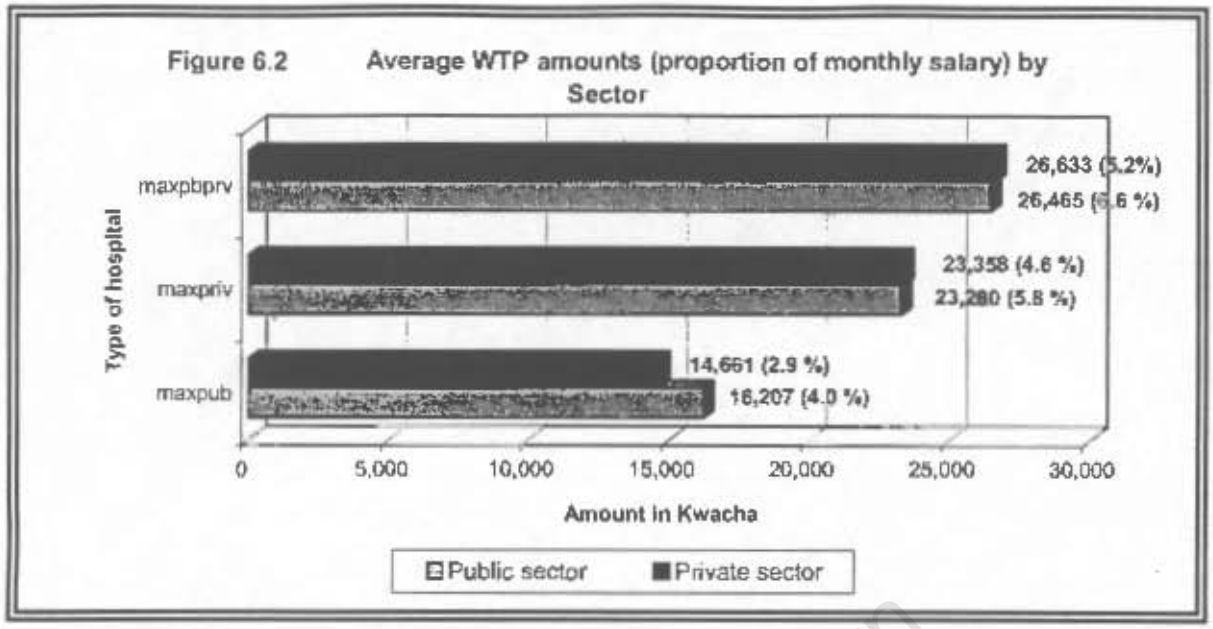
Respondents also said they were WTP more for inpatient services and specialized operations regardless of the type of hospital from which health care was sought. This is most likely due to the fact that employees understand that these two services are the most costly. This response is therefore consistent with the economics of costs for health care. Outpatient services attracted the least maximum WTP amounts among the types of hospitals. Again this result agrees with the experiences of costs associated with health care provision (see Table 6.2 below). What was puzzling however was why respondents said they were WTP much less for a combination of outpatient and inpatient services than they were for inpatient services only. A possible reason for this is that the lower weight given to paying for outpatient services may have outweighed the higher weight given to paying for inpatient services thereby deflating the mean figure respondents said they were WTP for a combination of the two services.

Table 6.2 Mean WTP amount (Zambian Kwacha) by hospital service and provider of medical care

Type of Hospital Service	Maxpub	Maxpriv	Maxpbprv
Outpatient services only	6,000	50,000	25,000
Inpatient Services only	20,000	50,000	30,000
Both Outpatient & Inpatient services	16,928	25,059	29,011
Specialized services	20,000	30,000	35,000

What was of interest also was how these average figures behaved when the sample of employees was stratified into public and private sectors. Comparison of these figures against the average monthly salaries in the public and private sector (which were K398, 198[54] and K507, 736, respectively) gives a clearer picture of what percentage of their income employees were WTP towards SHI.

[54] Note here this figure is much lower if we only consider Local and Central Government employees. However, employees in the parastatals were also classified as Public Sector employees and their inclusion in this sector inflated the average earnings.



It is striking that the figures given by respondents in the public sector and those in the private sector were almost the same (K23, 358 as opposed to K23, 280 for services provided by private hospitals or K26, 633 as opposed to K26, 465 if services were provided by a combination of private and public hospitals). This means that employees in both sectors attached the same kind of value to health services in private institutions or a mixture of public and private institutions (as proxied by the maximum WTP amounts) implying that the amount of money that would raised from any particular employee would be almost the same regardless of the sector provided equal numbers of employees were used.[55] However, private sector employees were WTP about 10 % less than public sector workers if services were to be provided by public hospitals (K14, 661 compared to K16, 207 for public workers). This again is an indicator of negative perceptions of publicly provided health services. Privately employed (and better remunerated) employees would rather seek their health care from private hospitals. Figure 6.2 above shows these findings.

[55] Because of discrepancies in earnings, however, public sector employees were WTP more when their maximum WTP amounts were expressed as a percentage of the average monthly salary in their sectors.

6.4 Percentage of premium to be borne by employee

Employees that were WTP for SHI were also asked to suggest a percentage of the total SHI contribution that each one of them was willing to bear. Table 6.3 below decomposes the mean premiums by the type of hospital service.

Table 6.3 Mean premium (%) proposed by respondents for each type of service

Type of service	Average Premium (%) that respondents proposed as contribution towards SHI for each type of service	Percentage of all of employees WTP[56]
Outpatient services	13	1.41
Inpatient services	26.5	1.41
Both inpatient & outpatient services	10.02	92.25
Specialised services	5	0.7
Weighted overall mean	**9.84**	

On average, 131 employees or 92.25 % of all the respondents that were WTP, said they wanted to have both inpatient and outpatient services covered and indicated their desire to contribute 10.02 % of the total health cost per employee. Only five other employees gave WTP premium figures for different hospital services.

This implies that the majority of workers wanted either their employers or government to shoulder almost 90 % of their total health cost. To avoid a return to free or almost free medical care provision, a large collection of employees needs to be enrolled so that there is pooling of risks and expenses. To ensure cross-subsidisation, the contribution from workers must be increased so as to allow Government to channel some money to the uninsured. If workers were allowed to contribute only 10 % of their total health cost, there would not be much room for cross subsidisation (unless the contribution from employers was also high enough).

[56] 4.2 % of those WTP did not volunteer a figure for the premium.

Using the above proposed premiums and given that respondents were also asked to state in absolute terms how much they would be WTP, it was possible to get an idea of how much employees felt their total health cost per month should be. For instance, the average premium percentage for SHI covering both outpatient and inpatient services was 10.02 %. From Table 6.2, the mean maximum WTP amount for SHI covering both outpatient and inpatient services if the source of health care was a public hospital (maxpub) was K16, 928. From these two figures, an inference can be made that employees placed a per capita value of K168, 942 (US $ 42.12) for a combination of outpatient and services in a public hospital per month.[57]

6.5 Preferred hospital services under SHI

The CV questionnaires presented a choice of four hospital services to respondents. Table 6.4 below summarizes the selections of all those employees that were WTP, as percentage of the total (original) sample as well as a proportion of the sample that was WTP for SHI.

Table 6.4 Percentage of survey WTP according to what services SHI is to cover

Who is to be covered?	Percentage of total (original) survey	Percentage of sample WTP
Outpatient Services Only	0.68	1.40
Inpatient Services Only	0.68	1.40
Both Outpatient and Inpatient Services	46.76	96.46
Specialised Services	0.34	0.74
Total	48.46	100.00

The majority of those interviewed and WTP for SHI (96.46 %) preferred to have a combination of both inpatient and outpatient services in the SHI package while 1.40 % said they desired that only outpatient services be offered under SHI. Another 1.40 % expressed the view that only inpatient services be part of the package

[57] Calculations by medical and actuarial experts would have to be made to determine a more accurate cost of health care per employee given a specific source of health care. These figures, however, are a rough indicator of respondents' expectations.

Table 6.5 below shows whom respondents desired that SHI should cover. A greater bulk was made up of those who wanted their spouses and children to be covered by the scheme (36.86% of total original sample or 76.06% of those WTP for SHI). This result is expected in this age that is centred on the nuclear rather than on the extended family.

Table 6.5 Percentage of survey WTP according to whom SHI is to cover

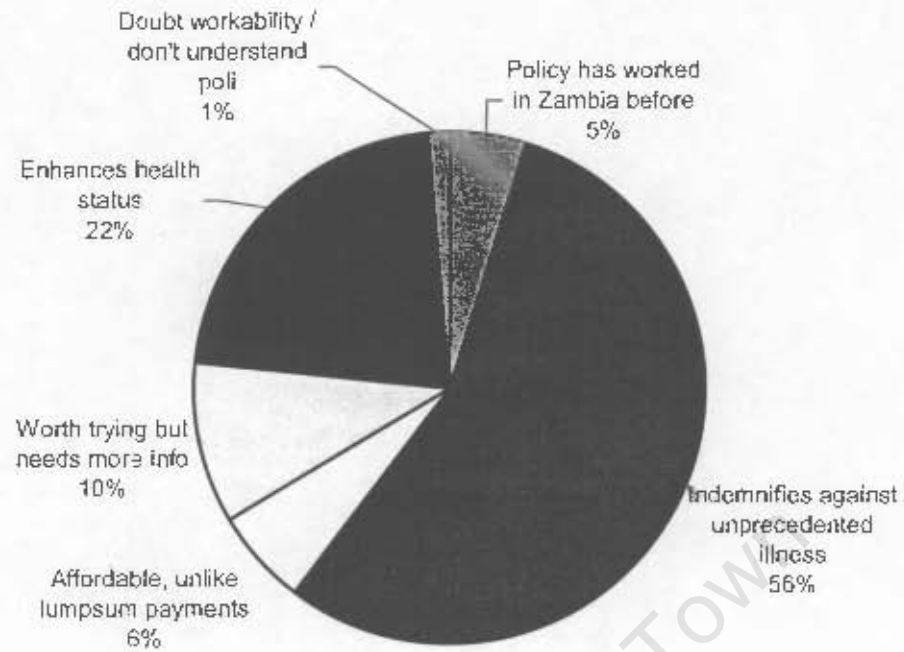
Who is to be covered?	Percentage of total survey	Percentage of sample WTP
Respondent Only	1.02	2.10
Respondent and Spouse	0.68	1.40
Respondent, spouse & Children	36.86	76.06
Respondent, spouse, children & all household members	9.90	20.43
Total	48.46	100.00

6.6 Reasons for respondents being WTP for SHI

The principle of having a system to indemnify oneself against unprecedented events seemed to have driven lot of respondents to be enthusiastic about SHI. 56 % believed that SHI would ensure medical care even when employees and those covered by the policy did not have money. 22 % believed that SHI would enhance their health status through provision of more affordable health care. 10 % felt that the policy was good and thus needed to be tried out, but only after thorough research. Others felt comfortable with having to make piecemeal payments for health care rather than lump sum disbursements.

What was however surprising was that 1 % of the respondents said they doubted the workability of the policy but still said they were WTP for it. See figure 6.3 below.

Figure 6.3 Reasons for being WTP SHI



6.7 Reasons for respondents not being WTP for SHI

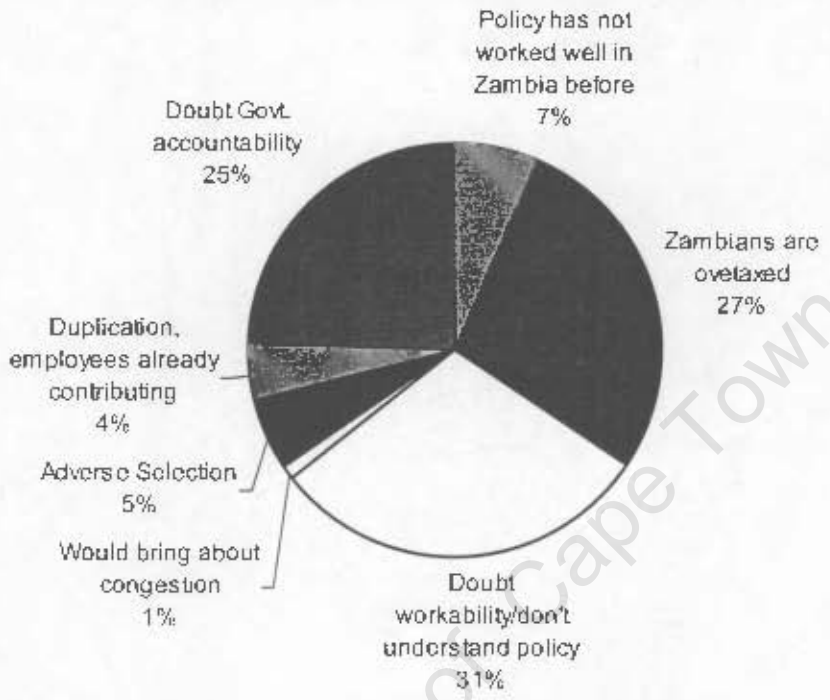
It is of critical importance to try and understand why certain employees were not prepared to pay for SHI. From the 293 that were sampled, 91 (31.05 % of whole sample) were not WTP for SHI.

According to Figure 6.4 below, the majority (31 %) just doubted the capacity[58] and will of government to successfully implement the scheme or did not fully appreciate how SHI would work. Another large group (27 %) cited the high tax burdens that they were facing as inhibiting further salary deductions. This issue of tax burden is one that needs to be seriously addressed in the implementation process. The past performance

[58] Issues of lack of included inadequate hospital equipment, drugs and managerial capacity. But also cited were poor staff attitudes. This has led to a lot of uncertainty concerning workability of the policy. The track record of government inadequacies included the perceived failure of prepayment schemes and the mishandling of government finances.

of government also came into question as past government financial malpractices cast some doubts on how safe SHI funds would be (25 %).

Figure 6.4 Reasons for not being WTP for SHI



6.8 Current Health Care Seeking Attitudes

According to Table 6.6 below, of all employees sampled, 68.26% reported that at least one of their relatives had been sick the previous year. Most of the respondents indicated that they sought medical help from private hospitals (52 %). This is an indicator of the ability of these employees to pay for SHI especially that private health care is expensive. Calculations also show that only 32.76% said they benefited from being part of a prepayment scheme. Regardless of this fact, 81.6 % of the sample still indicated that they paid for their medical services out of their own pockets. One would therefore assume that most employees disregarded their prepayment schemes and sought to make their own private payments. This is because the scope of coverage of services for prepayment schemes, mainly in public hospitals, is not extensive. This leads many scheme holders to either supplement the services from such schemes or

seek other alternatives altogether. It is however important to acknowledge that current attitudes to prepayment schemes are a good indicator of the aversion that Zambian have towards any form of prior payments for health care. But not until the package of services covered by such a scheme is expanded and more information on how the scheme works is disseminated shall we be able to make a more conclusive diagnosis of attitudes towards such a scheme.

Table 6.6 Cross tab of household members being sick in previous month and whether or not they belonged to a prepayment scheme. Figures in parentheses indicate percentage of total population in survey

Hhd member sick in previous month?	Member of Prepayment Scheme	Not member of Prepaymnet Scheme	Total
Yes	96 (32.76)	104 (35.49)	200 (68.26)
No	46 (15.7)	47 (16.04)	93 (31.74)
Total	142 (48.46)	151 (51.54)	293 (100)

6.9 What is the view of Employers?

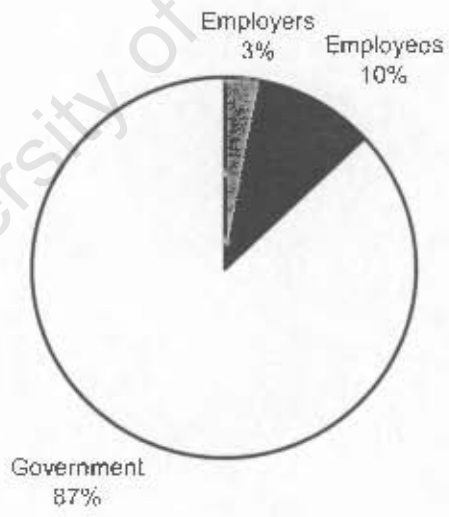
There were 27 public sector and 10 private sector employers. 51 % (17) indicated that they endorsed SHI while 35 % (13) were categorically against the policy. The rest were undecided. The major reason cited by those who were for the idea of SHI was that it would indemnify employees against unprecedented sickness and ensure that there was medical recourse whenever one was sick. This would be very helpful especially for the poorly paid employees. 86 % of the employers in favour of the policy preferred that SHI covers both outpatient and inpatient services and that it caters for the employee, his/her spouse and their children. For the majority of those that were not for SHI, the main reason was that they felt that Zambians are overtaxed or that there is a lot of doubt on the workability of the policy (92%).

In addition, most employers felt that SHI should be administered by an autonomous fund (59 %) with some intimating that the policy was long overdue (47%). There was emphasis, however, that there should be accountability in administering SHI. As for the effect that SHI was going on the number of employees, 52 % felt that they would not lay off any employees despite the fact that implementing SHI would mean that

employers contribute on average 50 %[59] of the total medical cost under SHI. But a review of the actual amounts that employers said they would be WTP reveals the fact that employers have different perceptions from those of employees of what the total health cost per employee is. The average maximum amount that employers said they would be WTP for an employee if SHI covered the employee's entire family was K11, 724. This translates to a third of the amount employees said they would be willing to contribute (see section 6.12). Going by the *more plausible* assumption that employee contribution is 10 % of the worker's total health cost, employers' contribution translates to 3.3 % of the total per capita cost with government making up the rest.

Based on the responses from employees and employers, a summary of how the total health care cost for SHI scheme members would be shared is presented in figure 6.5 below.

Figure 6.5 Health Care Cost Sharing



[59] This was the mean contribution that employers said they would contribute towards SHI

6.10 Regression Analysis Results

Two sets of data, each with its own type of multivariate regression, were considered in the regression analyses. The first one was the "Yes/No" WTP answers which employed the Logistic Regression Model. The second was the Tobit Regression Model in which the maximum WTP amounts that respondents gave was the dependent variable. As indicated earlier in 4.0.1.1, each of these two regressions contains results that used both an entire list of explanatory variables (E) as well as a limited one (L). But the interpretation given below is based on the complete list of independent variables for reasons given in 6.13.4.

Tables 6.7 and 6.8 below present the results of the regression analyses

6.10.1 Interpretation

The independent variables were tested for significance at three different levels of significance: 1%, 5% and 10%. Because of the numerous and varied responses obtained as answers to many of the questions in the survey, there were a number of categorical variables that were considered in the regression analyses. The base variable is given at the top of each set of categorical variables that are given as a response to the same question (e.g. the base category for the variable 'gender' is male i.e. gend =1). A negative value of the coefficient for any variable implies that a respondent with that response is **less likely** to be WTP for SHI (or volunteered a lower MAXWTP amount) than one who gave a response indicated by the **base category/variable**. A positive value means the converse.

6.10.1.1 Logistic Regression Model Results

The Logistic Regression Output is given in Table 6.7 below. 16 variables[60] were found to be statistically significant in determining the "Yes/No" answer to WTP.

At 1 % level of significance, 6 variables were found to have a significant effect on employees' WTP for SHI. These were:

[60] Actually this number reduces to 9 when one considers the fact that some of these 'variables' are just categories.

- Respondent's perceptions of the quality of health care in public hospitals (*four categories* i.e. good, average, poor and very poor)
- Affordability of health services in public hospitals
- If SHI was to cover specialised hospital services.

There was a positive relationship between declining quality of health care in public hospitals and WTP. The poorer the levels of perceived quality in public hospitals, the more respondents were WTP for SHI. Employees therefore seemed to be implicitly saying that they would be WTP for SHI as it had prospects of providing better services in public hospitals than were currently being obtained.

Closely tied to the quality of health care in public hospitals was the reason for such a choice. Employees cited different reasons to justify their views on quality of health care in the public domain. Of all the respondents, those that mentioned affordability of heath care as a reason for their view were found to be less likely to be WTP than those that alluded to non-availability of drugs as influencing their answer. This implies a negative relationship between affordability and WTP. This is an expected finding as the cost of health services is likely to be an important barrier to seeking health care. The more affordable the current health care arrangement is deemed to be, the less likely employees would be willing to switch to new health financing arrangements, such as a SHI scheme.

There was a positive relationship between WTP and if SHI was to cover specialised services. This implies that employees were more WTP for SHI if such services were included in the package than they would if only outpatient services were covered. Specialised services are very expensive and their inclusion in the SHI package would enable most employees to afford the services.

Testing at 5 % level of significance yielded 6 more statistically significant explanatory variables. In this group of variables were:

- The period that respondents spent in their current employment
- If no member in respondent's household belonged to a prepayment scheme.

- If the only services offered by a prepayment scheme were free drugs and consultation.
- If there was a perception of good care and efficient services in *public* hospitals
- If there was a perception of good care and efficient services in *private* hospitals
- If SHI guaranteed both outpatient and inpatient services.

Employees that had spent more time in their current employment were less WTP for SHI than those who had worked for a shorter time. A possible explanation for this could be the fact that with time, people find themselves in positions where their payment obligations accumulate (e.g. loans) and therefore contributing to SHI may present an undesired added burden to the salary deductions that they may already be facing. It may also be that as people work longer, their savings accumulate. This form of financial security may diminish the need for such employees to have some form of health insurance, as they would feel comfortable to pay their medical costs out of their savings.

Respondents who reported that none of their household members belonged to any prepayment scheme were more WTP for SHI than those that said a household member was part of such a scheme. Prepayment schemes do not involve pooling of expenses and therefore are more expensive than SHI. This realization could be the reason why those previously excluded from prepayment schemes opt for (cheaper) SHI. Another reason could be that poor performance of prepayment schemes may have forced people out of these schemes and SHI is viewed as a better financing system.

Respondents whose current prepayment schemes covered free drugs and consultation were more WTP for SHI than those whose scheme only provided free drugs. It is surprising that employees who are benefiting more from current health arrangements would be WTP more for another health care plan than those who are profiting less. A probable explanation could be that the former expect SHI to also provide the services they are currently receiving (and maybe even more), hence its attraction.

There was a negative relationship between WTP and a perception of good care and efficient services in *public* hospitals. This means that those that expressed satisfaction with the kind of care and efficiency in public hospitals were not willing to venture into any new health care plan whose benefits are not certain.

What was intriguing, however, was the positive relationship between a perception of good care and efficient services in *private* hospitals and WTP. This means that the more one is satisfied with the services in private hospitals, the more they will be WTP for SHI. Maybe it is the expectation that similar (or even better) services will be provided by SHI that drives their decision.

4 more independent variables were found to be statistically significant at 10 % level of significance. These were:

- If current prepayment scheme covered free consultation only
- If current prepayment scheme covered free hospital care only
- If quality of health care in private hospitals is very poor
- If SHI was to cover the respondent, his/her spouse and children

Those whose prepayment scheme offered free consultation only were more WTP for SHI than those whose scheme offered free drugs only. This result is understandable because it highlights the fact that the former would want to have more than just consultation. Besides, a person who can be only be guaranteed free consultation is in a less privileged position than one who receives drugs. This may explain further why the former would be more inclined to pay for SHI than the latter.

Understanding why those whose scheme guaranteed free hospitals care were more WTP for SHI than those whose scheme offered free drugs only would require an examination of what exactly is covered under hospital care. It maybe the case that the services covered are poor hence the reason for this group of respondents to want to try out SHI.

The negative relationship between poor quality of health care in private hospitals and WTP is expected because it implies that employees would express their dissatisfaction

with the current quality of hospital care by opting for a new health plan than promises better services.

Also, the more members of a respondent's household SHI covered, the more attractive the policy was. As a consequence, respondents were more WTP for SHI if it promised to cover them, their spouse and children as opposed to the policy only catering for the respondent.

Once again, the rationality conjecture may well explain why respondents were more WTP for SHI if the policy would ensure that there would be a combination of free drugs and consultation as opposed to just having free drugs.

Table 6.7 Logistic Regression Results for WTP

	Survey Logistic [61] Regression (E)	Survey Logistic Regression (L)
Dependent Variable	WTP	WTP
Explanatory Variables		
Base: Domain=1 (Public Sector)		
Domain=2 (Private sector)	0.185	-
	(0.341)	
Base: Gender =1 (Male)		
Gender=2 (Female)	0.028	-
	(0.045)	
Base: res=1 (Low Density)		
res=2 (Med. Density)	1.166	-
	(1.607)	
res=3 (High Density)	0.992	-
	(0.298)	
res=4 (Settlement area)	2.087	-
	(1.455)	

[61] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

	Survey Logistic Regression (E)	Survey Logistic Regression (L)
res=5 (rural area)	-0.383 (-0.095)	-
hhsize (Household size)	-0.006 (-0.062)	-
Base: mar=1 (Single)		
mar=2 (Married)	-0.468 (-0.769)	-
mar=3 (Divorced)	-0.942 (-0.806)	-
mar=4 (Widowed)	0.195 (0.155)	-
age	0.658 (1.534)	-
Base: educn =1 (Degree)		
educn=2 (Diploma)	-0.122 (-0.210)	-
educn=3 (Secondary)	1.148 (1.506)	-
educn=4 (Primary)[62]	0.373 (0.288)	-
exprnce	-0.086 ** (-2.082)	-0.015 (-0.568)
salary	-1.16e-06 (-1.238)	-
Base: prpay=1 (Yes)		
prpay=2 (No)	1.757 ** (2.102)	1.731 (2.381)
Base: Prepay servc=1 (Free Drugs)		
servc=2 (Free consultation)	1.683 * (1.729)	1.315 (1.724)
servc=3 (Free Hospital care)	2.100 * (1.887)	2.034 (2.160)

[62] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

	Survey Logistic Regression (E)	Survey Logistic Regression (L)
servc=4 (Free drugs & consultation)	4.719 **	2.680
	(2.194)	(1.974)
servc=5 (Free drugs & hosp. Care)	0.414	1.204
	(0.333)	(0.813)
servc=6 (Free drugs, consultation & hospital care)	-0.104	-0.628
	(-0.753)	(-0.404)
servc=7 (Free referrals, drugs, consultation & hospital care)	-0.269	-0.867
	(-0.210)	(-0.768)
servc=9 (Other)	1.476	0.836
	(1.343)	(1.031)
Base: sic=1 (A hhd member has been sick in prev month)		
sic=2 (No sick hhd member in previous month)	0.498	-
	(0.842)	
Base: medc=1 (Private hospital or clinic)		
medc=2 (Government hospital or clinic)	0.724	-
	(1.211)	
medc=5 (Just bought drugs)[63]	0.309	-
	(0.155)	
Base: pay=1 (Out of pocket)		
pay=2 (Employer pays)	1.039	-
	(1.258)	
pay=3 (Have medical insurance)	-0.391	-
	(-0.390)	
Base: qlty1=1 (Quality is excellent in public hospitals)		
qlty1=2 (Quality is good)	14.831 ***	18.343
	(7.492)	(16.741)
qlty1=3 (Quality is average)	12.117 ***	15.686
	(5.869)	(18.296)
qlty1=4 (Quality is poor)	11.217 ***	14.816
	(4.850)	(14.635)
qlty1=5 (Quality is very poor)	10.777 ***	14.551
	(4.421)	(14.004)

[63] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used

*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

	Survey Logistic Regression (E)	Survey Logistic Regression (L)
Base: reas1=1 (Non availability of drugs in public hospitals)		
reas1=2 (Bad attitude)	-0.461	-0.436 **
	(-0.698)	(-0.865)
reas1=3 (Attitude and no drugs)	0.744	0.424
	(1.172)	(0.865)
reas1=4 (Congestion)	0.476	-0.024 ***
	(0.356)	(-0.016)
reas1=5 (Caring & Efficient)	-2.926 **	-2.333 ***
	(0.509)	(-2.467)
reas1=6 (Too expensive)	2.314	1.846 ***
	(2.219)	(2.321)
reas1=8 (Affordability)	-4.741 ***	-4.563 ***
	(-3.314)	(-3.997)
Base: qlty2=1 (Quality is excellent in private hospitals)		
qlty2=2 (Quality is good)	0.301	-0.721 **
	(0.382)	(-1.364)
qlty2=3 (Quality is average)	0.661	-0.294
	(0.805)	(-0.471)
qlty2=4 (Quality is poor)	1.927	1.530***
	(1.373)	(1.370)
qlty2=5 (Quality is very poor)	2.764 *	2.241 ***
	(1.257)	(1.734)
Base: reas2=1 (Non availability of drugs in private hospitals)		
reas2=4 (Services not as expected)	1.238	0.850 **
	(1.451)	(1.074)
reas2=5 (Too costly)[64]	0.730	1.681
	(0.569)	(1.636)
reas2=6 (Caring & Efficient)	1.745 **	1.500 ***
	(2.067)	(2.050)

[64] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

	Survey Logistic Regression (E)	Survey Logistic Regression (L)
reas2=7 (availability of drugs)	1.365 (1.434)	1.440 *** (1.888)
Base: prov=1 (Employer provides benefits to sick employees)		
prov=2 (Employer does not provide benefits)	0.343 (0.675)	-
Base: cov1=1 (Outpatient services only)		
cov1=3 (Both outpatient & inpatient services)	3.033 ** (2.383)	3.034 (2.271)
cov1=4 (Specialised hospital services)	2.724 *** (1.257)	3.444 (1.046)
Base: cov2=1 (Respondent only)		
cov2=2 (Respondent and spouse)	1.815 (0.817)	2.130 (1.244)
cov2=3 (Respondent, spouse & children)	3.079 * (1.886)	2.125 (1.585)
cov2=4 (Respondent, spouse, children & hhd dependents)|	2.194 (1.362)	1.223 (0.923)
Base: run=1 (Government run)		
run=2 (Autonomous Fund)	-0.619 (-1.074)	-
run=3 (Any other reliable board)	1.473 (1.127)	-
Base: lose=1 (Rent)		
lose=2 (Food)	-0.457 (-0.991)	-
constant	-21.828** (-15.457)	-21.419*** (-16.835)
n	293	293
F-Value	319.73	44.20
Prob > F	0.0000	0.0000

Note that values in brackets indicate calculated t-statistics for the coefficients. Two - tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

6.10.1.2 Tobit Regression Model Results

This discussion is based on Table 6.8 below. At 1 % level of significance, 7 variables were found to be significant in determining the MAXWTP amount. These included:

- If a respondent was from a settlement area
- If a respondent was divorced
- If a respondents had (private) medical insurance
- If an employer covered workers' medical costs
- The quality of health services in private hospitals
- The maximum WTP amount respondents were prepared to pay for SHI if only a public hospital was involved (maxpub).
- Monthly health expenditure

Respondents that live in settlement areas were WTP a larger amount than those in low-density areas. This could be because there are not many medical centres in the former and so residents have to travel long distances to seek medical help. Even then there is usually congestion at hospitals and seeing a doctor is not guaranteed. Belonging to a scheme may be seen as a way of ensuring access at any time, as scheme members will most likely be given preference over non-scheme members. As a consequence, residents in settlements may see the need to commit to SHI and show that commitment to SHI by being prepared to pay higher MAXWTP amounts than residents in low-density areas.

Divorced employees volunteered larger MAXWTP amounts than single employees. This may be due to the fact that often, divorcees find themselves with relatively bigger families than single people[65]. Divorcees may thus feel duty bound to pay more towards SHI as a way of ensuring that their whole family is catered for. The relative affordability of SHI when compared to other financing mechanisms may also result in divorcees placing more weight on the financing mechanism, hence the higher MAXWTP amount.

[65] Observation has shown that chances are high that after divorce, household members will choose to live with the working parent, thereby resulting in a relatively large family for this parent. Our pool of divorcees is from the working class therefore our assumption of large families may hold.

There was negative relationship between the MAXWTP and if a respondent has private medical insurance cover. This means that respondents who were covered by private medical insurance were WTP much less than those who were paying for medical care out of their pockets. Bearing in mind the fact that the magnitude of the MAXWTP respondents were WTP *may be* an indicator of their level of support for SHI[66], this result may be interpreted as a statement on the part of the respondents that they were comfortable with private insurance and therefore did not want to venture into SHI ('public' health insurance).

On the other hand, employees whose employers shoulder the medical bills volunteered a higher amount than those that were paying out of their own pockets. A possible explanation for this is that the former ends up with a higher disposable income since they do not get to pay for any medical services. They are thus able to afford greater contributions towards the SHI alternative.

Respondents that said the quality of health care in private hospitals was very poor indicated that they would be prepared to pay much less than those that graded such services as excellent. This can be understood if we assume that any individual will only be WTP to pay more money if they are happy with the services they are currently getting, which is a foretaste of things to expect. The poorer the current services are, (and therefore the bleaker the outlook in the future), the lower the MAXWTP amount.

There was a negative relationship between MAXWTP and the maximum amount of money that people said they were WTP for SHI if services were to be sought only from a public hospital (maxpub). This means that the higher the amount respondents were WTP for SHI if it were to be provided by both public and private hospitals (MAXWTP), the lower that for SHI being confined to public hospitals only. This is a trade-off reflecting an element of choice. Respondents were only willing to either have SHI be provided by public hospitals only or by a combination of public and private hospitals.

[66] See 6.11 for a complete discussion on the implications of the magnitude of MAXWTP amount for WTP for SHI.

Finally, the higher the monthly expenditure on health, the less money respondents offered to pay for SHI. This is a striking result because one might have expected that people who incur huge expenses on health would want to go for the affordable SHI. A plausible explanation for this, however, may be that such people feel that they would be spending that kind of money anyway even outside the SHI scheme (on private medical care for instance) and therefore see contribution towards the scheme as an added cost

Testing at 5 % level of significance also yielded 6 more significant variables. These included

- If a respondent only has primary education
- Respondent's salary
- If the prepayment scheme that a household member belongs to only covers free consultation
- If quality of health care in private hospitals is good
- If quality of health care in private hospitals is average
- If quality of health care in private hospitals is poor

Employees that have primary level of education volunteered higher MAXWTP figures than those that are degree holders. This may be due to the fact that one's level of education is commensurate with one's salary. While the amount of disposable income that an individual has determines how much they will pay for health care, it also dictates the health care seeking options that are available to such an individual. Poorly educated (and therefore poorly remunerated) workers may find themselves with fewer options thereby making SHI quite attractive. The higher MAXWTP amount may thus be an indicator of the level of support for SHI.

The higher an employee's salary, the higher the MAXWTP amount. This is because as workers find themselves with more disposable income, they are willing to channel more money into consumption of goods, including health care.

Respondents whose prepayment schemes only guaranteed free consultation were prepared to pay more that those whose scheme only ensured provision of free drugs.

This can be seen as a way of expressing the desire for medical schemes, such as SHI, to cover more services. Limited service provision under existing medical schemes drove employees to pay more so as to expand the services provided.

There was negative relationship between the perception of quality of health care in private hospitals and MAXWTP amount. The less the satisfaction expressed with current services in these institutions, the less the amount they were WTP for SHI.

7 more variables were found to be significant at 10 % level of significance. Included in this group were:

- If a respondent was widowed
- Employees' age
- If no member of a respondent's household was sick in the month prior to the survey
- What the source of medical health care for the sick household member was
- If quality of health care in public hospitals is poor
- If an employer does not provide any form of benefits to sick employees.
- The maximum amount that employees were WTP for SHI if health services were sought from private hospitals.

There was a positive relationship between being widowed and MAXWTP. It seems that widows/widowers, just like divorcees, volunteered higher amounts than single employees to ensure that their normally bigger families are covered. It may also be because SHI provides them with a cheaper option especially in the face of diminished income due to the loss of another source of income. This may explain their resolve to contribute optimally to the scheme.

The older one is, the less the MAXWTP. As one gets older, the risk of getting ill increases and one would have expected that age would influence MAXWTP in a different direction. But this result is comparable to the one obtained in the BLM for the period a worker spends in their job. It may therefore be possible that increased investments (especially savings) as one gets older tend to dampen the need for health insurance.

Respondents that did not report having had any sick member of the household in the month prior to the survey were WTP much less than those who did. It is expected that sickness patterns would influence health-spending behaviour and households that may not have had any sicknesses in the past may not feel the need to pay as much for SHI as those that have had.

Respondents that sought medical care for their sick household members from public hospitals were WTP much less than those that went to private hospitals. The MAXWTP amount in this case may be seen as a reflection of the ability to pay. Public hospitals are the cheapest and so workers that sought medical help from these institutions may be of low-income levels, hence the lower MAXWTPP amount.

But there was a positive relationship between poor quality of health care in public hospitals and the MAXWTP amount. A possible explanation for this is that some respondents saw increasing the amount spent on health care as a means of improving health care quality in these hospitals.

There was an inverse relationship between the MAXWTP amount and employers not providing any benefits for their sick employees. These poor conditions of service may also be extended to salaries implying that employees may be poorly paid as well. It is therefore expected that the lower the salaries, the lower the MAXWTP amount.

The higher the maximum WTP amount for SHI services provided by private hospitals, the higher the MAXWTP amount. Seeking health care from the more expensive private hospitals is a reflection of one's greater ability to pay. It is therefore not surprising that those who are WTP more for private health care would also be prepared (and able) to pay more for SHI.

Table 6.8 Tobit Regression Results for MAXWTP

	Tobit [67] Model (E)	Tobit Model (L)
Dependent Variable	MAXWTP Amount	MAXWTP Amount
Explanatory Variables		
Base: Domain=1 (Public Sector)		
Domain=2 (Private sector)	0.016 (0.228)	-
Base: Gender =1 (Male)		
Gender=2 (Female)	- 0.124 (-1.712)	-
Base: res=1 (Low Density)		
res=2 (Med. Density)	-0.126 (-0.853)	-0.141 (-1.130)
res=3 (High Density)	-0.216 (-1.592)	-0.081 (-0.634)
res=4 (Settlement area)	0.176*** (0.897)	-0.036 (-0.171)
res=5 (rural area)	1.581 (4.085)	0.604 (1.411)
hhsize (Household size)	0.021 (1.601)	-
Base: mar=1 (Single)		
mar=2 (Married)	0.088 (0.662)	0.039 (0.307)
mar=3 (Divorced)	1.066*** (4.675)	0.579** (2.524)
mar=4 (Widowed)	0.540* (2.088)	0.129 (0.654)
age	-0.015* (-1.829)	-0.005 (0.773)
Base: educn =1 (Degree)		

[67] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

	Tobit Model (E)	Tobit Model (L)
educn=2 (Diploma)	0.098 (0.950)	0.114 (0.827)
educn=3 (Secondary)	0.108 (0.852)	-0.039 (-0.285)
educn=4 (Primary)[68]	0.395** (2.108)	0.215 (0.810)
exprnce	0.009 (0.969)	-
earn (How much was earned in previous month)	5.04e-09 (0.378)	-
salary	2.82e-07** (2.311)	1.85e-07* (1.689)
Base: prpay=1 (Yes)		
prpay=2 (No)	-0116 (-0.853)	-
Base: Prepay servc=1 (Free Drugs)		
servc=2 (Free consultation)	0.338** (2.556)	0.245 ** (2.612)
servc=3 (Free Hospital care)	0.191 (1.074)	0.333** (2.678)
servc=4 (Free drugs & consultation)	0.470 (2.207)	0.424** (5.516)
servc=5 (Free drugs & hosp. Care)	-0.129 (-0.688)	-0.434* (-1.994)
servc=7 (Free referrals, drugs, consultation & hospital care)	0.096 (0.402)	-0.010 (-0.035)
servc=9 (Other)	0.063 (0.325)	0.204 (1.661)
Base: sic=1 (A hhd member has been sick in prev month)		
sic=2 (No sick hhd member in previous month)	-0.191 * (-1.955)	-0.079 (0.710)

[68] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

	Tobit Model (E)	Tobit Model (L)
Base: medc=1 (Private hospital or clinic)		
medc=2 (Government hospital or clinic)	-0163 * (-2.015)	-0.086 (-0.908)
medc=5 (Just bought drugs)[69]	-0.158 (-1.128)	-0.604*** (-2.753)
Base: pay=1 (Out of pocket)		
pay=2 (Employer pays)	0.416*** (3.163)	0.300 * (1.790)
pay=3 (Have medical insurance)	-0.503*** (-3.423)	-0.189 (-1.028)
Base: qlty1=1 (Quality is excellent in public hospitals)		
qlty1=2 (Quality is good)	-0.026 (-0.166)	0.259 (1.538)
qlty1=3 (Quality is average)	-0.096 (-0.878)	-0.022 (--0.180)
qlty1=4 (Quality is poor)	0.233* (2.682)	-0.046 (-0.395)
Base: qlty2=1 (Quality is excellent in private hospitals)		
Qlty2=2 (Quality is good)	-0.350** (-2.898)	-0.187 (-1.507)
Qlty2=3 (Quality is average)	-0.329** (-2.199)	-0.173 (-1.206)
qlty2=4 (Quality is poor)	-0.442** (-2.951)	-0.625*** (-2.980)
qlty2=5 (Quality is very poor)	-1.435*** (-6.049)	-1.501*** (-5.231)
Base: prov=1 (Employer provides benefits to sick employees)		
prov=2 (Employer does not provide benefits)	-0.134* (-1.920)	0.036 (0.456)
Base: cov2=1 (Respondent only)		
cov2=2 (Respondent and spouse)	0.219 (0.589)	-

[69] Note that values in brackets indicate calculated t-statistics for the coefficients. Two –tailed tests were used

*, **, and *** indicate 1, 5, and 10 % level of significance, respectively.

	Tobit Model (E)	Tobit Model (L)
cov2=3 (Respondent, spouse & children)	0.176 (0.686)	-
cov2=4 (Respondent, spouse, children & hhd dependents)|	0.069 (0.296)	-
Base: run=1 (Government run)		
run=2 (Autonomous Fund)	-0.122 (-1.405)	-
Maxpub (maximum SHI amount respondent would pay in public hospital)	-0.001*** (-3.471)	-0.001*** (-2.726)
Mnexp (monthly health expenditure)	-4.73e-06*** (-4.846)	-1.29e-06* (-1.883)
Maxpriv (maximum SHI amount respondent would pay in private hospital)	9.98e-06* (-2.203)	-2.67e-06 (-0.848)
Constant	9.523*** (28.927)	9.559*** (33.392)
n	293	293
Pseudo R2	0.5911	0.4711
Prob > Chi2	0.0000	0.0000

Note that values in brackets indicate calculated t-statistics for the coefficients. Two - tailed tests were used
*, **, and *** indicate 10, 5, and 1 % level of significance, respectively.

6.11 Comparing the Logistic and Tobit Regression Results

A striking feature about the analyses in 6.10.1.1 and 6.10.1.2 is that one may not be entirely correct to assume that if an individual is WTP for SHI (i.e. is in favour of the policy) then the MAXWTP they are WTP will also be high. These two decisions are not necessarily equivalent.

If a respondent is WTP for SHI, the implications for the MAXWTP amount they will be WTP can be one of the following two:

a) They may want government or their employer to shoulder most of their (employees') medical cost in which case the MAXWTP amount will be low

b) Some employees may place it upon themselves to bear a large part of their medical costs in which case the MAXWTP amount will be high.

Therefore it may not always follow that the more likely one is WTP for SHI, the higher the MAXWTP amount. It is however true that sometimes the magnitude of the MAXWTP amount may be said to be an indicator of the level of support for SHI. Appreciating this fact may explain why some variables in the Tobit model have different signs from those in the Logistic model[70] and why certain variables were only important in explaining WTP and not MAXWTP or only MAXWTP and not WTP.[71]

But there were variables that were common in explaining both WTP and MAXWTP such as if prepayment schemes that any member of a respondent's household provided free consultation or if the quality of health care in public hospitals was deemed to have been very poor.

6.12 How much revenue would be raised from SHI?

A rough calculation of how much revenue could be raised can be done based on the data presented in 6.3, 6.5 and 6.9 above. Table 6.9 below shows how much could be raised for each type of medical health supplier based on employees' preferences. From the Table, about K14.692 billion (US $ 3.66 million) would be raised if all employees sought medical help from private hospitals, K10.406 billion (US $ 2.59

[70] One such example is if quality of health care in private hospitals was very poor (qlty2=5). It has positive influence in the Logistic regression and negative influence in the Tobit regression.

[71] Variables uniquely significant in the WTP (Logistic) regression were: if any member of respondent's family belonged to a prepayment scheme, if prepayment scheme provided free hospital care or a combination of free drugs and consultation and a respondents work experience. The others were if quality of health care in public hospitals was either good, average or poor, if the reason for the perception of quality on public hospitals was the cost, the type of services to be covered by SHI as well as whom SHI was going to cover. Variables that were unique in significantly determining the MAXWTP (Tobit) regression were residential and marital status, respondent's age, whether or not a household member was sick in the month prior to the survey and the source of medical care for sick household member. The rest were respondent's mode of payment for medical expenses, quality of health care in private hospitals and if employer provides benefits to sick employees.

million) if they all were to go to public hospitals and K19.345 billion (US $ 4.82 million) if they were to seek help from both providers.[72] The results show that more money would be raised if employees were guaranteed treatment from both private and public hospitals under SHI. An examination of the columns also shows that more funds would be raised if SHI was to cover both inpatient and outpatient services. This is because this type of coverage was the most desired and therefore would attract the most employees.[73]

Table 6.9 - How much would be raised monthly from SHI for different hospitals

	Type of Hospital service				
	Inpatient services	Outpatient services	Both Inpatient and outpatient services	Specialized services	TOTAL
Total number of employees according to desired service (% of total employees)	6, 466 (1.37)	6, 466 (1.37)	455, 858 (96.58)	3, 210 (0.68)	472, 500 (100.00)
Mean employee maximum WTP amount if private hospital (Maxpriv)	50, 000	50, 000	25, 059	30, 000	
Total possible Amount that could be raised from private hospitals from *employees* ('Mln)	323.3	323.3	11, 423.34	96.3	12, 166.2
Mean employer maximum WTP amount if private hospital (Maxpriv)	-	-	5, 541	-	
Total possible Amount that could be raised from private hospitals from *employers* ('Mln)	-	-	2, 525.9	-	2, 525.9
Total possible Amount that could be raised from private hospitals from both employees and employers					14, 692.1
Mean employee maximum WTP amount if public hospital (Maxpub)	20, 000	6, 000	16, 928	20, 000	
Total possible Amount that could be raised from public hospitals from employees ('Mln)	129.32	38.80	7, 716.76	64.2	7, 949.1
Mean employer maximum WTP amount if public hospital (Maxpub)	33, 333	667	4, 907	-	
Total possible Amount that could be raised from public hospitals from employers ('Mln)	215.53	4.31	2, 236.9	-	2, 456.7

[72] Note that these figures include the amounts that employees were WTP as well as the contribution paid on behalf of employees by employers.

[73] The majority of surveyed employers who were in favour of SHI (86 %) expressed a desire to have the policy cover both outpatient and inpatient services.

Total possible Amount that could be raised from public hospitals from both employees and employers					**10, 405.8**
Mean employee maximum WTP amount if priv & pub hospital (Maxpbprv)	30, 000	25, 000	29, 011	35, 000	
Total possible Amount that could be raised from priv & pub hospitals from employees ('Mln)	**193.98**	**161.65**	**13, 224.89**	**112.35**	**13, 692.9**
Mean employer maximum WTP amount if priv & pub hospital (Maxpbprv)	-	667	12, 390	-	
Total possible Amount that could be raised from priv & public hospitals from employers ('Mln)	-	**4.31**	**5, 648.1**	-	**5, 652.4**
Total possible Amount that could be raised from pub & priv hospitals from both employees and employers					**19, 345.3**

Another way of estimating the amount of money that SHI can possibly raise is to examine the results from the Tobit regression model. We look at the predicted value of the average of the maximum amount that an employee was WTP. The predicted mean maximum WTP amount (ptobit) is K35, 000. This is the predicted mean maximum amount that employees are WTP regardless of the type of hospital or hospital service. If SHI was to be implemented as a compulsory policy for all in the employment sector, then K35, 000 x 472, 500 employees = K16.537 billion (US $4.12 million) would be potentially raised monthly from employees. Of course the figure would be different if enrolment were voluntary.

This is one side of the story. Though employers said they would be WTP 50 % of the employee's total health cost, the actual figures they gave as the maximum amount of money they were WTP reveal a different story. This figure falls much short of that of employees. On average, employers were WTP K11, 724 per employee per month. This means that in essence, employers were only WTP less than a third of what employees were prepared to. In addition to the money that could be raised from employees, employers would contribute K11, 724 x 472, 500 employees = K5.539 billion (US $1.38 million) per month.

In total therefore, government would raise about K22.067 billion (US $5.5 million) per month from employers and employees. This translates to K264.912 billion (US

$66 million) annually. The total projected government budget for 2002 was given as K396.1 billion of which K191.8 billion was expected from external donors (MOH 2000: 28-29). SHI could therefore potentially raise 66.89 % of the total government expenditure. This means that it would be possible for government to cut down its expectation from external sources by K63.212 billion annually. Or even more desirable, Government would be able use these 'savings' to cross-subsidize those outside the scheme. As already pointed out, there should also be scope to allow part of the contributions to be used to cover services that are outside the package.

6.13 Tests of Reliability and Accuracy of WTP answers

Contingency evaluation studies are prone to suffer from various reliability problems. This is mainly because of the hypothesized nature of the market for which valuation questions are asked (Morrison and Gyldmark, 1992). The biases that may result from the underlying assumptions must be tested to ensure that correct results are obtained. The following tests were done and the results gave no basis for believing that the analysis may be underpinned by biases or inconsistencies.

6.13.1 Missing Responses

Non-responses to questions in the survey instrument may present a problem especially when it comes to validating the generalization of findings from a study to a larger population. It is important to note that only completed questionnaires were used. Of the 315 questionnaires originally distributed only 293 were used. 22 questionnaires (6.9 %) were discarded. Only those that gave complete or usable answers to the CV questions had their responses used in the Logistic and Tobit regressions.

As already noted in 4.0.1.1, only those that were WTP volunteered positive MAXWTP amounts while those that were not WTP had their MAXWTP amounts censored. To account for this non-random censoring problem, a Tobit model was used. This ensured that observations for which MAXWTP responses were set to zero were not ignored.

6.13.2 Explanatory power of independent variables in the models

Gujarati (1995) postulates that the Pseudo R^2 is a good measure of the level to which the independent variables explain the variation in the dependent variable. From the Tobit regression, the pseudo R^2 was 0.5911. This implies that about 59% of the variation in the maximum WTP amount can be explained by the explanatory variables. This value is actually bigger than those of other results of contingent valuation studies involving survey data such as the UNDP (1996) and Mitchell and Carson (1989). The Prob > F value in the Logistic regression was 0.0000 implying that the whole model was significant. This means that we can rely on the results obtained to explain MAXWTP and WTP.

6.13.3 Multicollinearity and Heteroscedasticty

The presence of Multicollinearity in a model results in coefficients having large standard errors. STATA takes care of Multicollinearity by dropping collinear variables and so the variables used in the results are free of the problem. If there is Heteroscedasticty in a model, Gujarati (1995: 366) says inferences made 'may be very misleading'. Performing the Cook-Weisberg test for heteroscedasticity yielded a prob>chi 2 value of 0.126 which leads us not to reject the null hypothesis (even at 10 % level of significance) of No Heteroscedasticity. We therefore conclude that the residuals are homoscedastic.

6.13.4 Sensitivity of Models to Different Specifications

The two models were each run with two sets of explanatory variables: the complete or entire list of explanatory variables (E) and a limited list (L). This was done in a bid to compare how sensitive the models were to different specification of explanatory variables.

For the Tobit model, the reduction in the number of explanatory variables resulted in the independent variables having a lower explanatory power of the variation in the model. The pseudo R^2 fell from 0.5911 to 0.4711. This implies that less variation in the model could be explained by the explanatory variables in the 'L' Tobit model than in the 'E' model.

Misspecifications may explain why the direction of influence, on the dependent variable, of some the independent variables was different in the two model

specifications. Cases in point for the Logistic model are two variables: if quality of health care in private hospitals is either good (qlty2=2) or average (qlty2=3). These variables exert a negative effect on the dependent variable in the model with limited explanatory variables but a positive one in the model with a complete set of explanatory variables. Similarly, utilising the entire set of explanatory variables in the Tobit model yielded a positive relationship between poor quality of health care in public hospitals (qlty1=4) and the MAXWTP amount but a negative relationship in the limited –explanatory-variables version of the model.

Another inconsistency was that of certain variables being insignificant in the 'E' specification but turning out to be significant in the 'L' model. Examples of such variables in the Logistic regression model are reas1=2 (if reason for quality of health care in the public hospitals was bad attitude of staff) and reas1=4 (if the reason for the perception was congestion)

Because of these discrepancies, the results of the study are based on the model that used the entire set of explanatory variables.

6.13.5 Unrealistic WTP amounts

It is possible that in answering the question concerning the maximum amount that employees would be WTP for SHI per month, respondents may have given responses that were either unrealistically high or unrealistically low. One way of checking these mean amounts was to test each one of them against the weighted overall mean. Very few of the respondents gave mean WTP amounts that were more than twice the overall weighted mean WTP amount. This means that the amounts were consistent.

Another check for consistency is to compare the mean WTP amounts against the present average level of expenditure on health care (Table 6.10 below). Let us examine the MAXWTP figures for outpatient services if the source of medical care was a public hospital. Only 10% of respondents in this group gave WTP amounts that were above their present mean expenditure on health care (K6, 000). The majority (70 %) indicated amounts that were less than their present mean expenditure on health care of K37, 857 and their average WTP amounts were lower this amount by K31, 500. This makes sense because it implies that people would be WTP for SHI as long

as it is cheaper than what they are presently spending on health. Though improving quality of health care was one of the desires expressed, SHI is even more attractive if employees pay less than they presently do. Comparable patterns can be seen for all the other kinds of services and this consistency for all the MAXWTP amounts lays credence to the reliability of the figures respondents gave.

Table 6.10 Comparison of WTP amounts with present expenditure on health care

Type of service	Proportion (Percentage) of employees	Average present health expenditure	Average WTP Bid less average present health expenditure
If source of medical care for respondents was a public Hospital			
MAXWTP for outpatient services >current expenditure	10	6, 000	9, 000
MAXWTP for outpatient services =current expenditure	20	6, 500	0
MAXWTP for outpatient services <current expenditure	70	37, 857	-31, 500
MAXWTP for inpatient services >current expenditure	0	0	0
MAXWTP for inpatient services =current expenditure	0	0	0
MAXWTP for inpatient services <current expenditure	100	200, 000	-180, 000
MAXWTP for both inpatient & OPD services >current expenditure	24	7, 886	14, 371
MAXWTP for both inpatient & OPD services =current expenditure	11	22, 500	0
MAXWTP for both inpatient & OPD services <current expenditure	65	62, 926	-50, 297
MAXWTP for specialized hospital services >current expenditure.	0	0	0
MAXWTP for specialized hospital services =current expenditure.	0	0	0
MAXWTP for specialized hospital services <current expenditure.	0	0	0
If source of medical care for respondents was a private hospital			
MAXWTP for outpatient services			

>current expenditure	30	10, 333	18, 000
MAXWTP for outpatient services =current expenditure	0	-	0
MAXWTP for outpatient services <current expenditure	70	45, 714	-34, 914
MAXWTP for inpatient services >current expenditure	0	0	0
MAXWTP for inpatient services =current expenditure	0	0	0
MAXWTP for inpatient services <current expenditure	100	100, 000	-50, 000
MAXWTP for both inpatient & OPD services >current expenditure	37	12, 784	18, 392
MAXWTP for both inpatient & OPD services =current expenditure	10	27, 143	0
MAXWTP for both inpatient & OPD services <current expenditure	53	75, 216	-56, 665
MAXWTP for specialized hospital services >current expenditure.	0	0	0
MAXWTP for specialized hospital services =current expenditure.	0	0	0
MAXWTP for specialized hospital services <current expenditure.	0	0	0

If source of medical care for respondents was both public and private hospitals

MAXWTP for outpatient services >current expenditure	27	10, 333	18, 000
MAXWTP for outpatient services =current expenditure	18	51, 500	0
MAXWTP for outpatient services <current expenditure	55	41, 667	-33, 867
MAXWTP for inpatient services >current expenditure	0	0	0
MAXWTP for inpatient services =current expenditure	0	0	0
MAXWTP for inpatient services <current expenditure	100	200, 000	-170, 000
MAXWTP for both inpatient & OPD services >current expenditure	39	12, 778	24, 190
MAXWTP for both inpatient & OPD services =current expenditure	8	24, 615	0
MAXWTP for both inpatient & OPD services <current expenditure	53	81, 565	-61, 544
MAXWTP for specialized hospital services >current expenditure.	0	0	0
MAXWTP for specialized hospital services =current expenditure.	0	0	0
MAxWTP for specialized hospital services <current expenditure.	0	0	0

7.0 DISCUSSION, POLICY ISSUES AND RECOMMENDATIONS

7.1 Summary of Discussion of Results

SHI is one of the available alternatives in the portfolio of health financing mechanisms. Its feasibility, desirability and ability to raise additional revenue in a country like Zambia depends on, amongst other elements, the existence of the right socio-economic conditions, political support for the policy and the presence of competent institutions charged with the administrative and managerial responsibilities in SHI. The fulfilment of these benchmarks can be evaluated by gauging the extent to which the objectives set out in 1.3 have been met. A summary assessment of the degree to which the methodological questions posed in 1.4 have been answered will provide an important measurement tool.

Question One - (i) What is the size and composition of formal sector employment in Zambia? (ii) What are the key features of health seeking behaviour of the formal employees? (iii) What is the worker's current method of payment for health services?

The formal employment sector makes up about 4.5 % of the total population. 57.5 % are in the private sector while the rest are in the public domain. Standing at 460, 260 in 2000, this number was projected at 472, 500 in 2002.

The majority of employees sampled reported that at least one of their relatives had been sick in the month prior to the survey. Most of the respondents indicated that they sought medical help from private hospitals (52 %). Considering the fact that private health care is expensive, such health seeking patterns point out the ability of employees to pay for SHI. Another case in point is that despite some employees (32.76 %) indicating that they or a member of their household belonged to a prepayment scheme; still 81.6 % said they paid for their medical needs out of their pockets. While this may be an argument against the poor services covered by

prepayment schemes, the trend may also be viewed as a reflection that employees may really be able to sustain contributions towards SHI.

Question Two – (i) Is there potential for coverage of formal sector employees and their dependents? (ii) How much money would be raised from SHI?

At 472, 500 and 4.5 % of the total population in 2002, the formal sector in Zambia compares to that of other African countries in which SHI has been implemented. So in terms of the pool of potential SHI members, there are adequate numbers to raise substantial amounts of resources. Given these numbers and the predicted mean maximum WTP amounts for employees (K35, 000) and that for employers (K11, 724) about K22.067 billion (US $5.5 million) would be raised monthly.

This figure can also be broken down according to the type of hospital service provider. About K14.692 billion (US $ 3.66 million) would be raised if all employees sought medical help from private hospitals, K10.406 billion (US $ 2.59 million) if they all were to go to public hospitals and K19.345 billion (US $ 4.82 million) if they were to seek help from both providers.[74]

57.5 % of the Zambian formal sector is made up of better-remunerated private sector workers. If government were to classify payments according to salary scales, then the majority of workers would contribute a lot more than the minority.

The proportion of respondents that were not WTP for SHI was 31 %. Of this proportion, a third cited lack of understanding of the policy for their position. With more information being disseminated on the policy, there is a possibility that some more employees would be WTP for SHI. Awareness programmes are not likely to face any major hitches because the bulk of those surveyed either had diploma or degree level of education (50 and 32 %, respectively). Another encouraging factor is that only about 20 % of all employees surveyed **categorically** said no to SHI. Given this then, there is enough information that seems to suggest that formal workers in Zambia are WTP for SHI.

Question Three - Would there be an increase in utilisation of health services following introduction of SHI? Are the existing health services capable of meeting any increases in demand that may follow the establishment of SHI?

Utilisation levels are surely bound to increase because SHI presents a more affordable way for employees to pay for their health care needs. This is more so because of the large proportion that hoped that SHI would play the role of indemnifying against sickness in times when employees did not have any money. In addition, there is the added advantage of employers contributing to the pool of medical funds which action would further help increase utilisation levels. Care should therefore be taken to ensure that there is no over-utilisation of services, which may lead to congestion and ultimately a drop in quality of health care.

But the existing health care infrastructure, especially in the public sector, leaves much to be desired. Many respondents cited lack of drugs and other facilities at public hospitals as hindering access while the cost of health care was an impediment in private institutions. If SHI is to bring about an improvement in the health standards, then a good chunk of the funds realised from contributions should be used to improve the quality and standard of health care infrastructure in hospitals. The physical capacity requires expansion if the aspirations of SHI are to be met.

Question Four – What health services must be covered by SHI? Who should be covered by SHI, and how can equity objectives be met?

Government's position on the usage of health care finances is that public funds can only be used for health services in the Basic Health Care Package. SHI, then, could cover the package on the understanding that there should be scope for expanding to services beyond the package. Part of the contributions should be used to achieve this. This is more important considering the fact that, unlike before, workers will be asked to pay a little more while government pays a little less. Therefore the services offered must be greater than before.

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[74] These figures include the contribution from employers

A vast majority of respondents said that they prefer that SHI cover them, their spouses and their children. It will be important to restrict coverage to these household members. This would be necessary to avoid duplication where other members of the household move from one homestead to another are therefore catered for in every place they visit. It is important that care not too high as this might have a negative impact on respondents' disposable income. To ensure equity, there is need for effective cross-subsidisation, which will enable government to transfer funds, which are freed by SHI, to the uninsured i.e. to those in the informal sector and the unemployed. In addition the problems of adverse selection and moral hazard should be guarded against.

Question Five - Are employees and employers willing to join SHI?

The question of whether or not employees are WTP for SHI has been tackled in the answer to Question Four. Employers are the other important players in SHI and their contribution cannot be ignored. 51 % of employers agreed that SHI be implemented. This was on condition that there be it be administered by an autonomous body to ensure accountability. 35 % of the employers gave a clear-cut 'no'.

Question Six - What are some of the factors that influence WTP for SHI? What is the impact of explanatory variables on the maximum amount that respondents are WTP?

16 factors (some of these were just categories of the same variable) were found to significantly influence respondents' WTP for SHI. Positive relationships were found between WTP on one hand and not having a prepayment scheme, the type of services covered by a prepayment scheme, the quality of health care in public and private hospitals and a perception of efficient services in *private* hospitals. Other variables with a positive influence were the type of services covered by SHI and whom SHI was to cover.

Negative relationships were found between WTP and the duration spent in current employment, a perception of efficient services in *public* hospitals, as well as affordability of publicly provided health care services.

20 variables (some were categories again) were significant in influencing the MAXWTP amount. Those that had a positive relationship were residential and marital status, level of education, employee's salary and the type of services covered by prepayment schemes. The others were if employers paid employees' medical expenses, perception of poor quality of health care in public hospitals and the maximum WTP amount respondents were prepared to pay for private-hospital - provided SHI.

Negative weights were exerted on MAXWTP by respondents' age, if at least one member of the household was sick in the month prior to the survey, the source of medical help for the sick member, and if an employee has medical insurance. Others were the quality of health care in private hospitals, if employer does not provide any benefits for sick employees, monthly health expenditure, the maximum amount respondents were WTP for SHI provided through public hospitals.

Question Seven – If the conditions for SHI are not favourable, is the situation redeemable and if so, what kinds of measures need to be effected?

One way of beginning to address this question is to consider the reasons given by people who were not WTP for SHI (see Figure 6.4). Lack of adequate information, or understanding, about SHI was a major problem. Many did not fully appreciate the policy because not much is known about it and this led to doubts about the workability of the policy. Zambia also has one of the highest tax rates and contributing towards SHI would lead to further diminishing workers' disposable income. Equally worrying is the inadequate capacity, as well as lack of financial credibility, of government to ensure efficient management of SHI. In addition, bad experiences of insurance schemes and prepayment schemes in the past have led to doubts about the performance of any similar schemes.

Resolving these problems then presents a starting point to redeeming the situation, thereby making conditions conducive for SHI to be implemented. If the policy could be explained and people's awareness and understanding rose, then there would be a better appreciation of SHI. Considering the high tax burden faced by the Zambian

employee, there should also be way of ensuring that contributing towards SHI does not make scheme members worse off. One way of doing this is to guarantee that SHI covers a complete package of health services so that scheme members do not have to spend more money out of what they contribute towards SHI.

Discussions with policy makers and other stakeholders also identified the lack of management capacity among health personnel to handle SHI. This discovery should therefore present an opportunity to educate, equip health personnel as well as to build their administrative capacity before the policy can be implemented. Considerable amount of time should be spent in training and educating health personnel and this will ensure the efficient running of the scheme. Bearing in mind the complexity of SHI, it is necessary to incorporate the skills and expertise of those working in financial institutions and other informed players in the informal sector. This would undoubtedly enhance the credibility of personnel charged with running SHI. But there should be regular checks and supervision by the CBoH, for instance, to ensure that there is accountability of funds as well as adherence to policy.

Lessons should be learnt from the failures of schemes that were similar to SHI, such as employer-based insurance and prepayments schemes. PHR (1997) pointed out that the prepayment schemes for example normally served the interests of the richer population. The poor could not afford the contribution towards these schemes. But perhaps the issue of affordability would not play a very big role in SHI (in the initial stages at least) as it involves those formally employed, and therefore those that have an income. Nevertheless salary differentiations should be taken into account in the design of SHI but this consideration should not take precedence over the ultimate goal of cross-subsidisation of the uninsured by the insured.

The other area of concern is that pertaining to health infrastructure. Health infrastructure, especially in the public hospitals cannot cope with the numbers of patients that visit these institutions. This calls for improvements in health infrastructure if SHI members are to be happy to belong and contribute towards the scheme.

7.2 Conclusion

This study set out to ascertain whether the formal sector was in favour of having SHI as a financing mechanism, and if so, how much employees be WTP for SHI. The majority of employees were in favour of SHI as were most of the employers. To establish what factors determine these decisions, and if it was feasible for SHI to be implemented, the socio-economic, demographic and health characteristics of formal employees, the potential SHI scheme members, were studied. A two-stage regression model was used (a Logistic followed by a Tobit model) and the results obtained show the factors that influence WTP and MAXWTP amounts. These are given in 6.9 and 7.1. The health seeking behaviour of respondents presented some evidence in support of implementing SHI.

7.3 Policy Recommendations

The results of the survey provide some relevant policy insights. It is important, however, to note that the results from this study are not in themselves adequate to enable one to make unequivocal policy recommendations. Rather, the results must be viewed as one of the first steps in assessing the feasibility and desirability of SHI for Zambia. There is still need to examine how issues such as those relating to equity (cross-subsidisation and ATP) and efficiency can be addressed before a final position can be taken.

In a time when the 'twin towers' of poverty and HIV/AIDS are ravaging the country, a Primary Benefit Model (PBM)[75] of SHI may be a policy to consider for a government that looks at providing health care from a cost-sharing point of view. The majority of employees and employers endorsed SHI and implementing the policy would be a wise decision. But it should begin with the formal sector The proportion of employees in Zambia (4.5% of the total population) would also provide a pool large enough to raise substantial amounts of resources provided there is acceptance by the working community. SHI may be used to upgrade the quality of health care systems.

[75] This is a model where contributions from employees and employers are specifically channelled to solely finance health care benefits. See Bennett and Ngalande-Banda (1994)

A number of people interviewed expressed their lack of complete understanding and awareness of the policy. It is therefore important that all forms of media (radio, television, print) are used to raise understanding and awareness of the general populace with regard to SHI. There is need to emphasize the fact that SHI is not commensurate with free medical care and that there is still the requirement for employees to make a reasonable contribution that would make the mechanism of pooling resources workable.

SHI should be able to meet the goal of equity. To ensure an equitable scheme, government should not subsidize the formal sector in any way. Rather, Government should focus on transferring the resources that would have otherwise been used on the formally employed to the uninsured. Therefore, implementation should only take place after clear guidelines and mechanisms of effecting cross-subsidisation have been laid down. There must also be a lucid way of distinguishing between those catered for by SHI and those that are not.

In view of the high tax burden borne by formally employed Zambians as well as the need to ensure that SHI provides a complete package, the policy should not be restricted to the Essential Health Care Package but should also cater for services outside the package e.g. public health provision. Though the majority of respondents expressed their desire to have a combination of outpatient and inpatient health care in the SHI package, the importance of promoting public health care services as a way preventing or minimising illness and therefore seeking inpatient and outpatient services cannot be denied. There should be consideration for public health programmes such as urine screening, blood pressure check-ups, and provision of bed nets.

52 % of employees interviewed indicated that they sought medical help from private health care providers. The role of private health care providers in SHI cannot thus be underestimated. Of particular importance would be the need to think of franchises where private institutions would be contracted to provide services on behalf of government. Efforts should also be made to harness technology in the private sector. In view of the poor services currently obtaining in publicly run hospitals, the private sector should be encouraged to scale-up their activities while government should be

implored to concentrate more on the role of making policies and guidelines for the policies. But this calls for strengthening of supervisory duties so as to ensure that ethics are adhered to.

SHI should be efficient. Health personnel must be ready and competent to handle the demands of SHI before it can be implemented. Efforts should therefore be made to increase the management capacity among health personnel. This would involve the training and educating of health workers about SHI so as to ensure the efficient running of the scheme. Taking into account the involvedness of SHI, it is essential to integrate the expertise and know-how of professionals in the financial institutions. This is especially important when it comes to pegging contributions, which task would require the involvement of actuaries if equity is to be ensured.

Strict monitoring of the collection and usage of SHI funds is the only way of making certain that there is transparent and reliable accountability. This is why an autonomous body, removed from the bureaucratic (and sometimes inefficient) structures of government, would be the best type of body to run SHI. The responsibility of overall supervision and ensuring that policy is adhered to should still lie with CBoH or the Ministry of Health.

7.4 Suggestions for future research

- The majority of people in Zambia are either in the informal sector or unemployed. Attempts should thus be made to study ways of extending the SHI scheme to these groups characterised by lack of an organised body or irregular and/or seasonal cash incomes. Lessons must also be learnt from community financing schemes, which catered for the informally employed employees. An example of such a scheme was the Mwase Mpangwe initiative in the Eastern part of the country.

- In the prospect of increased funding, consideration must be given to have a larger sample interviewed. This sample must cater for both rural and urban areas so as to capture responses from all sections of employees.

- A comprehensive Ability to Pay (ATP) study must be done to help guide policy makers in determining how much employees are supposed to contribute in form of premiums towards SHI.

- Factors affecting the choice of who is to run SHI should also be investigated as the issue of who will control and administer the policy is cardinal.

- It would be enlightening to study the effect of confounding factors on WTP and the MAXWTP amount to see how results thus obtained compare against those obtained from the two-stage regression models used.

Appendix 1

WILLINGNESS TO PAY FOR SHI IN ZAMBIA

Questionnaire for Employees

Dear Respondent,

You are kindly requested to answer all questions, with the help of an interviewer. Please be assured that any information you give will be treated with the strictest confidentiality. The information you provide will be important and will help guide policy makers. Thanking you in advance for your assistance.

SECTION 1: IDENTIFICATION

Locality Name: _____

Company/Ministry Name: _____

Name of Respondent: _____

Enumeration Number:						
Household Number:						
Sex:						
Urban/Rural (Urban =1, Rural = 0):						
Date of Interview:						
Research Assistant's Code:						
Field Supervisor's Code:						

SECTION 2: SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

1. What is your residential status?

   1. Low density residential area (e.g. Roma, Kabulonga)_____
   2. Medium density residential area (e.g. Emmasdale) _____
   3. High density residential area (e.g. Mtendere) _____
   4. Settlement area _____
   5. Rural area _____
   6. Other (please specify) _____

2. How many members are in your household? _____

3, How many of the members of your household are within the following ages?

Age	Female	Male
0-5		
6-15'		
16-39		
40+		

4. What is your marital Status?
   1. Single _____
   2. Married _____
   3. Divorced _____
   4. Widowed _____
   5. Other (Specify) _____

5. What is your age in years? _____

6. What is the highest level of Education you have reached?
   1. Degree _____
   2. Diploma _____
   3. Secondary _____
   4. Primary _____
   5. None _____

7. For how long have you been in your present employment?

   _____

8. How much did you earn last year from your employment? _____

9. What is your monthly salary?

0-K50,000	
K51,000-K100,000	
K101,000-K150,000	
K151,000-K200,000	
K201,000-K350,000	
K351,000-K500,000	
K501,000-K650,000	
K651,000-K800,000	
K801,000-K1,000,000	
K1,000,000-K1,500,000 >K1,501,000	

10. How much did you earn last year from other sources (e.g. business)?

    _____

Section 3. PAST HEALTH CARE PRACTICES, EXPENDITURES & ATTITUDES

11. Are you or any member of your household a member of a prepayment scheme for health care services?
1-Yes 2-No

12. If the answer to question 11 is yes, how much is the membership fee per month? K_____

13. If the answer to question 11 is yes, what is covered in the pre-payment scheme?
1-Free Drugs 2-Free Consultation 3-Free Hospital care
4-Other (please specify)_____

14. Have you or any member of your household been sick in the past one-month?
1. Yes_____ 2. No _____

15. Where did you or a member of your household seek medical care when you/they got sick?

1.Private clinic 2. Government hospital/clinic 3.Traditional Healer
4. Other (please specify)

16. What was the reason for your choice in Question 15 above?

_____

_____

17. How did you pay for the medical bill?

1-Out of Pocket 2-Employer pays 3.Medical Insurance pays
4- Other (please specify)_____

18. On average how much do you spend (for you and members of your household) on health care in a month (e.g. last month)? K_____

19. How do you view/perceive the current quality of care from health services in government/public hospitals?

1-Exellent 2-Good 3-Average 4-Poor 5- Very poor

20. What is the reason(s) for your choice in question 19?

_____

_____

21. How do you view/perceive the current quality of care from health services in private hospitals?

1-Exellent 2-Good 3-Average 4-Poor 5- Very poor

22. What is the reason(s) for your choice in question 21?

_____

_____

23. Does your employer provide any benefits for its workers when hey fall sick?
1-Yes 2-No

24. If the answer to question 25 is Yes, what type of benefits are provided?
1-Employer has contracted a specific doctor where all workers go for health care
2- Employer has contracted a specific hospital/clinic where all workers go for health care.
3- Firm has clinic on the premises
4- Workers seek medical care anywhere but make claims thereafter.
5-There is an additional medical allowance given above the salary.
6-Other (please specify)_____

Section 4 HYPOTHETICAL MARKET AND WTP QUESTIONS

Government is considering implementing a policy called Social Health Insurance (SHI). Under SHI, all employees that are in the formal sector make a **compulsory contribution** (a percentage of their salary) to a health Insurance Fund and obtain a package of health services in return at a latter stage when they are sick. Of the set premium, employees contribute a certain proportion with the employer paying the difference. If this policy is implemented, you will be required to make a compulsory contribution and **you (and probably your family)** will be entitled to free medical care when sick. If not, you may be required to pay a minimal fee at the point of use. The following questions solicit your views about this policy.

25. What is your view about government introducing this policy?
1-Strongly agree 2-Agree 3-Neutral 4-Disagree 5-Strongly Disagree

26. What are the reasons for your answer in question 27 above?

_____

_____

27. If this policy were to be introduced, what percentage of the premium (contribution) should employee make? Employee should contribute _____% of the premium.

28. If such a policy were to be implemented, what type of services would you want the scheme to cover?
1-Outpatient services only
2-In-patient services only.
3-Both outpatient and inpatient services
4-Other (Please specify)_____

29. Who should be covered by such a policy if it were to be implemented?

1-Only you
2-You and your wife/husband
3-You, your wife/husband and your children
4-Other (please specify)_____

30. How do think the insurance fund to which contributions are made should be run?

1-Governement owned 2-Autonomous fund 3-Other (please specify)_____

31. If you are in favour of Government implementing SHI and assuming that the SHI scheme covers your whole family and the benefits are as described below, please give an indication of the maximum amount of money you would be willing and able to pay per month towards the SHI fund.

Benefits	Amount in Kwacha/month
1. All health services are free but must be sought from public hospitals	
2. All health services are free but must be sought from private hospitals	
3. All health services are free and can be sought from both the public and private hospitals/clinics	

32. If you made the above payment in question 33, is there any item on your usual consumption bundle that you would have to sacrifice?

1-Yes 2-No

33. If the answer to question 34 is yes, which of the following items would you have to sacrifice?

1-Rent____2-Food____3-Clothing____4-Houseware____5-School fees_____6-Family celebrations____7.Other (please specify)____

Appendix 2

WILLINGNESS TO PAY FOR SHI IN ZAMBIA

Questionnaire for Employers

Dear Respondent,

You are kindly requested to answer all questions, with the help of an interviewer. Please be assured that any information you give will be treated with the strictest confidentiality. The information you provide will be important and will help guide policy makers. Thanking you in advance for your assistance.

Section 1 Background information of employer

1. What type of firm/company/organisation is this one?
1-Private 2-Parastatal/public

2. For how long has this firm/company/organisation been in operation? _____years

3. How many employees does this firm/company/organisation have?

1-_____Permanent employees 2-_____casual employees
3- Others (please specify)_____

4. What type of work is done in this firm/organisation?
1-Production 2-Services 3-Others

Section 2 Health seeking Behaviour and Attitudes

5. How do you view the current quality of care from health services in government/public hospitals?

1-Exellent 2-Good 3-Average 4-Poor 5- Very poor

6. What is the reason(s) for your choice in question 5?

_____

_____

7. How do you view the current quality of care from health services in private hospitals?
1-Exellent 2-Good 3-Average 4-Poor 5- Very poor

8. What is the reason(s) for your choice in question 7?

_____

_____

9. What is your view about/perception of the current quality of care from health services in government/public hospitals?
1-Exellent 2-Good 3-Average 4-Poor 5- Very poor

10. What is the reason(s) for your choice in question 9?

_____

_____

11. Does this firm/company/organisation provide any health benefits to its workers when they fall sick? If **NO**, please go to ***Section 3***
1- Yes 2-No

12. If the answer to question 25 is Yes, what type of benefits are provided?

1-Employer has contracted a specific doctor where all workers go for health care
2- Employer has contracted a specific hospital/clinic where all workers go for health care.
3- Firm has clinic on the premises
4- Workers seek medical care anywhere but make claims thereafter.
5-There is an additional medical allowance given above the salary.
6-Other (please specify)_____

13. If the company has a clinic on the premises, what health services are offered?

1-Outpatient services only
2-In-patient services only.
3-Both outpatient and inpatient services
4-Other (Please specify)_____

14. If a specific doctor/hospital has been contracted to provide services, how do you pay them?

1-The company pays a capitation fee for every employee that will be treated.
2-Employee pays the whole bill and makes claims later
3-Doctors are paid a salary every month
4-Other (please specify)_____

Section 3 Hypothetical Market and WTP questions

Government is considering implementing a policy called **Social Health Insurance (SHI)**. Under SHI, all employees that are in the formal sector make a compulsory contribution (a percentage of their salary) to a health Insurance Fund and obtain a package of health services in return at a latter stage when they are sick. Of the set premium, employees contribute a certain proportion with the employer paying the difference. If this policy is implemented, workers will be required to make a compulsory contribution and they (and probably their family) will be entitled to free medical care when sick. If not, the workers may be required to pay a minimal fee at the point of use. The following questions solicit your views about this policy.

15. What is your view about government introducing this policy?
1-Strongly agree 2-Agree 3-Neutral 4-Disagree 5-Strongly Disagree

16. What are the reasons for your answer in question 27 above?

_____

_____

17. If this policy were to be introduced, what percentage of the premium (contribution) should the **employer** make? Employer should contribute _____% of the premium.

18. If such a policy were to be implemented, what type of services would you want the scheme to cover?
1-Outpatient services only
2-In-patient services only.
3-Both outpatient and inpatient services
4-Other (Please specify)_____

19. Who should be covered by such a policy if it were to be implemented?

1-The individual worker only
2-The worker and their wife/husband
3-The worker, their wife/husband and children
4-Other (please specify)_____

20. How do think the insurance fund to which contributions are made should be managed?

1-Governement owned & controlled 2-Autonomous fund 3-Other (please specify)_____

21. Assuming that the SHI scheme covers the **worker's entire family** and the benefits are as described below, please give an indication of the **maximum** amount of money that your firm/company/organisation would be **willing to pay** per month **per employee** towards the SHI fund.

Benefits	**Amount in Kwacha/month**
1. All health services are free but must be sought from public hospitals	
2. All health services are free but must be sought from private hospitals	
3. All health services are free and can be sought from both the public and private hospitals/clinics	

22. If this policy were introduced, what would be its impact on the number of workers you employ?

1- Reduce the number of people employed
2-Increase the number of people employed
3-It would have no impact
4-Other (please specify)_____

23. What are your final comments about the implementation of such a policy?

_____
_____
_____
_____

Appendix 3

INTERVIEW GUIDE FOR QUALITATIVE INFROMATION ON SHI IN ZAMBIA

1. Is there any need to introduce SHI in Zambia? Why?
2. Is it possible to extend coverage of SHI to people in the informal sector?
3. What are your views about introduction of SHI in Zambia?
4. What percentage of the premium should employees pay? And what should be paid by employers?
5. Is there adequate capacity to administer, manage SHI in Zambia?
6. What would you say about the quality of health services in public hospitals/clinics? Private hospitals?
7. What impact would introduction of SHI have on equity and efficiency?
8. Would introduction of SHI increase or decrease demand for health services? Is the available infrastructure adequate to handle introduction of SHI? Is implementation possible with existing legal framework?
9. What are the major obstacles that would be encountered in implementing SHI?
10. Do current taxes; pensions and other contributions leave capacity for contributions towards SHI?
11. What is the level of awareness of prepayment schemes and other such schemes?
12. What kind of health services must be covered by SHI?
13. Should insurance fund be autonomous or government-controlled?
14. Who should be covered by SHI? Who should be exempted?
15. What other financing mechanisms should be used together with SHI?

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