THE EFFECT OF THE DRUG PRICE INTERVENTION ON RETAIL PHARMACIES IN SOUTH AFRICA

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ABBREVIATIONS

- AIDS - Acquired Immune Deficiency Syndrome
- ANC - African National Congress
- COGS - Cost of Goods Sold
- DOH - National Department of Health
- GP - Gross Profit
- GSK - Glaxo Smith-Klein
- HIV - Human Immunodeficiency Virus
- HP - Hyper Pharmacy
- IHD - International Healthcare Distributors
- NCE – New Chemical Entities
- OTC - Over the Counter
- PMPRB - Patent Medicines Prices Review Board
- PPRS - Pharmaceutical Price Regulation Scheme
- PC - Price Control
- PSF - The Pharmacy Stakeholders' Forum
- ROE - Return on Equity
- SEP - Single Exit Price
- SP1 - Small Pharmacy 1
- SP2 - Small Pharmacy 2
- UPD - United Pharmaceutical Distributors
- USAP - United South African Pharmacies
- VAT – Value Added Tax

ABSTRACT

In May 2004 there was a shake-up in the private pharmaceutical industry in South Africa. The National Department of Health (DOH) introduced a form of price control which for the first time attempted to regulate prices at every level of the pharmaceutical distribution chain. The price controls was immediately challenged and was not properly implemented until partially upheld by the Constitutional Court at the end of 2005. Throughout 2006 the DOH (through the Pricing Committee) reconsidered parts of the price controls, dealing with an appropriate dispensing fee for retailers, which were struck down by the Constitutional Court. In late 2006, a new dispensing fee was published and then immediately challenged. The DOH claims they had to do this to make sure that medicines remain affordable, and pharmacists at the end of the day get a reasonable income from each price band. The United South African Pharmacies (USAP) and the Pharmacy Stakeholders' Forum (PSF) claim that implementation of the price controls would have pharmacies not being able to cover their expenses. The objectives of the study are to ascertain whether the price controls forced upon the healthcare industry by the DOH of South Africa is viable in small retail pharmacies and what the impact will be on small retail pharmacies and their communities. The actual annual income statements for 2006 of three typical pharmacies were obtained. The next step was to determine the effect that the price controls would have had on the total sales and key financial factors in the income statement if the price controls was already in force in 2006. A revised experimental income statement was then created for the pharmacies. The experimental statements were then compared to the actual statements to determine the effects of the price controls. The comparison showed that all the pharmacies were following the same trend and had a decrease in net profit. Two of the pharmacies would have had a net loss for the year while the third will continue to show a net profit although much lower. This net profit decreased from 7% to 3% following a decrease in gross profit (GP) from 33% to 30%. The

GP of the front sales shop remained unchanged, while the GP percentage for the dispensary decreased by 5% from 30% to 25%. The DuPont model showed that the Return on Equity (ROE) decreased from 83% to 33%. Drug price regulations could force many pharmacies into bankruptcy and ensure that the distribution of drugs to rural and remote areas will be financially impracticable. Once in place, the drug price regulations are likely to become ever more complex and onerous to comply with. The price regulations may end up reducing price competition among manufacturers, and in the long run, will harm the consumer by fixing prices above what would otherwise have been achieved in an open competitive market. The drug price regulations distort the normal market clearing process and effectively increase demand for medicine without providing the economic incentives that serve to match demand with supply.

Keywords: Department of Health, Drugs, Drug regulations, Pharmacies Pharmacy Stakeholders' Forum, Price controls, Schedule.

CHAPTER 1
INTRODUCTION AND STATEMENT OF THE PROBLEM

1.1 INTRODUCTION

In May 2004 there was a shake-up in the private pharmaceutical industry in South Africa. The National Department of Health (DOH) introduced a form of price control which for the first time attempted to regulate prices at every level of the pharmaceutical distribution chain. The price controls were immediately challenged and were not properly implemented until partially upheld by the Constitutional Court at the end of 2005. Throughout 2006 the DOH (through the Pricing Committee) reconsidered sections of the price controls regulations dealing with an appropriate dispensing fee for retailers, which were struck down by the Constitutional Court. In late 2006, a new dispensing fee was published and then immediately challenged (Williams, 2007).

1.2 BACKGROUND

Pharmaceutical manufacturers and retailers of medicine have seen a price freeze for several years but this occurrence is rapidly changing. Face to Face's Lindsay Williams spoke to the Health Department's director of pharmaceutical pricing Dr Anban Pillay about the matter (Business Day, 2006).

"There has been a knee-jerk reaction — I'm sure over the next couple of days people will see what sort of effect it is going to have on the earnings of these companies. I've been looking through the change in the legislation and it seems complicated. Can you explain?"

"Unfortunately we had to make it complicated, the simple reason is that for the

low-cost medicines any dispensing fee with a flat rand value plus a percent would make those very expensive. Most South Africans, unable to afford medical schemes buy these medicines out of their pockets. What we have done is to try to balance all of this by saying that at the lower end medicines will be priced that there's a high percent value and a low rand value. In the R0 - R75 band we have R4 plus 33% — that means for a R10 item you are basically paying R3,30 plus R4 which is R7,30. On the upper end, items of more than R1000, you're going to be paying R50 plus 1,5%. That we think is the balance. There are tiers in between, for example, R75 - R250 will be R25 plus 6%. From R250 - R1000 it is going to R33 plus 3%. **We have had to do this to make sure that medicines remain affordable, and pharmacists at the end of the day get a reasonable income from each price band"** (Business Day, 2006).

USAP (United South African Pharmacies) claims that implementation of the price control would lead to pharmacies not being able to cover their expenses. David Boyce, the director of management healthcare systems, said that of 2 467 pharmacies polled, 63% of them would fail, 22% were likely to survive, while 15% were at a significant risk of failing. "A casualty rate whereby operating expenses exceeded operational income would occur" (SABC News, 2006).

The Pharmacy Stakeholders' Forum (PSF) said, using that formula, up to 75% of pharmacies were at a significant risk of failure if they relied on the dispensing fee for their survival. Sham Moodley, coordinator of the PSF, said the impact would hit pharmacies in rural areas the hardest. "You might have cheap medicine but is that healthcare? This basically focuses on access to medication - if you destroy that, the cost is going to escalate not for the guys in the cities but smaller communities which would have to drive to bigger centres to get medicine" (Finance24 , 2006).

While corporate pharmacies in affluent areas are most likely to survive, their survival is by no means guaranteed. Smaller independent pharmacies are at

higher risk, with pharmacies in rural and other underserved areas, where they are needed most, at greatest risk (Finance24, 2006).

The public has repeatedly seen this battle unfold in the media with the DOH claiming that pharmacies will survive and the PSF claiming exactly the opposite. The PSF had analyzed financial data of 75% of the pharmacies in SA and made a conclusion that the future of pharmacies is in jeopardy. The DOH keeps informing the public that their analysis (DOH) shows suitable profit margins for pharmacies. This study attempts to bring some clarity on the subject and hopefully give the confused public some insight into the prices of drugs and the impact that price control might have on their community. The public can't be kept in the dark and stay uninformed, for the closure of pharmacies in rural areas will most definitely increase costs of drugs if consumers have to drive hundreds of kilometres to gain access to essential drugs.

1.3 PROBLEM STATEMENT

The pharmacist profession provides a service to the South African communities and it is essential in the control of scheduled substances. It is also a profession that is responsible for the safe usage and storage of drugs by consumers. The fact that there is even speculation that the price controls can harm the pharmacy profession is a troubling factor for the health sector in South Africa.

The DOH claims that the proposed price controls is necessary to keep the prices of medicine affordable for all South Africans (Business day, 2006). They also claim that pharmacists will still earn a reasonable income with the implementation of the price control on drugs. The PSF contradicts this statement hence this study will therefore undertake to evaluate the substantiality of these statements.

It is clear that a problem is mainly caused by two parties that have made conclusions from their individual analysis. They are both struggling to prove their conclusions because financial data of the analysis are kept hidden from the public. This study is therefore a downright necessity to make sure the price controls have been thoroughly studied and evaluated before it is forced upon all pharmacies by the DOH.

1.3.1 Research questions to be addressed

This study will focus on gaining insight into the statements and speculations made by the DOH and the PSF. The focus shifts to the following questions that need to be addressed as soon as possible before the implementation of the price controls takes place in order to clarify the present uncertainty:

- Is the proposed price control on drugs viable in small retail pharmacies?
- What will the impact be on small retail pharmacies and their communities?

1.3.2 Study objectives

To answer the above research questions, this study proposes two objectives, i.e.:

1. to ascertain whether the price controls forced upon the healthcare industry by the DOH of South Africa is viable in small retail pharmacies; and to
2. determine what the impact will be on small retail pharmacies and their communities.

Should this forced price controls be impracticable and hamper the pharmaceutical industry, then retail pharmacists will have to find new strategies

to ensure their survival. Should the price controls bear any fruit and a number of pharmacies do actually survive, the quest will be to determine how and for how long they will be able to keep their doors open.

1.4 RESEARCH METHODOLOGY

The research will be done in two phases:

1. A literature study. The most recent literature, locally and globally, in respect of the factors influencing the financial viability of retail pharmacies as well as the measurements and benchmarks thereof, will be consulted. Information obtained from the literature study will be used as basis for the empirical study.

2. Due to the sensitive nature of this regulation it was impossible to collect any financial data from the PSF. The PSF represents approximately 80% of independent pharmacies in South Africa and is the largest representative body for pharmacists and pharmacies in the country. It was planned to acquire at least 5 years' financial statements of pharmacies that would statistically represent the population of small pharmacies in South Africa, but the request was denied. This setback required the researcher to approach volunteers who trusted him with financial data. The financial data obtained will be used to study the financial impact of the new regulation on the relevant financial success factors of a pharmacy.

The conclusion will be based on the findings of the literature and empirical study in respect of the two study objectives.

1.5 CHAPTER DELINEATION

- Chapter 1 – Introduction and background.
- Chapter 2 – Literature study: A short introduction to the scheduling and pricing of drugs followed by literature on the economics, history and international experiences of price controls.
- Chapter 3 – Empirical study: A financial analysis of a voluntary pharmacy group. A control set of data was compared to the experimental projected data if price control were to be implemented.
- Chapter 4 – Conclusion: A conclusion is drawn based on the findings, with additional information about further study topics and recommendations.

1.6 CONCLUSION

It is clear that the skirmish between the DOH and the PSF will just lead to further debate between the parties and more confusion for the public. A decision can only be made if all uncertainties about price controls have been clarified and agreed upon. This next chapter will attempt to reduce some of the current confusion by researching the literature and history of previous price control attempts.

CHAPTER 2
LITERATURE STUDY

2.1 INTRODUCTION

The pharmaceutical pricing battle has been long and acrimonious and much of the debate has been clouded by political rhetoric and a lack of transparency. Interestingly, the greatest controversy has surrounded the dispensing fee for retailers (pharmacists). It is unclear why there has been so much focus on that particular end of the distribution chain, rather than on the manufacturing end, considering that the ex-manufacturer price of drugs is more relevant to the affordability and availability of medicines (Williams, 2007).

This, however, is about to change with the introduction of international benchmarking, which is likely to result in the price of medicines being based on international prices rather than being set by the manufacturer. The Constitutional Court has noted the central significance of the international benchmarking methodology to the transparent pricing system remarking that, "the methodology will ultimately determine the Single Exit Price (SEP) of every medicine or scheduled substance in South Africa (Williams, 2007).

The ongoing pharmaceutical price regulation litigation makes for interesting reading and the jurisprudence which has emerged as a result, has contributed to many pertinent debates in administrative and constitutional law. This study will not focus on these issues; instead, it will examine the following:

- The scheduling of drugs for the reason that the price control regulations differ for certain schedules.
- Price control and the economics involved will also be explained extensively.

- Historical and international experiences of price control will also be stated due to dire consequences which happened in the past that was supposed to be a warning out of which the same mistakes were made over and over again.
- The negative consequences of price control obtained from the literature.

2.2 INTRODUCTION TO MEDICINE

One of the many roles that a pharmacist fulfils is being the safeguardian of scheduled medicine. These drugs are potentially unsafe and may cause some patients to become addictive (especially the higher the schedule becomes). The pharmacies and pharmacists therefore need to control the access to these medicines and the safe effective usage of it for unique patients. An example of a dangerous drug that sometimes finds its way onto the black market is the schedule 6 drug Rohypnol which is commonly known as the "Date Rape Pill". It is essential for pharmacies to safeguard these dangerous drugs and to not leave patients with an excess supply of these drugs.

The scheduling of medicine

The High Court of South Africa has defined a medicine as a substance used for a therapeutic or medicinal purpose. A scheduled substance merely means a substance declared to be such by the Minister of Health in the schedules to the Medicines Act. The active ingredient(s) in the product usually dictate its status. The degree of control is based on the safety profile of the substance and the therapeutic indication for its use and may result in a substance being placed in more than one schedule (Doms, 2007).

Each schedule has its own conditions under which substances in a particular schedule may be sold. They are categorised as (Doms, 2007):

- ***SCHEDULE 0*** - These are Over the Counter (OTC) medicines, available for open sale, that are known to be substantially safe in use and for which advice or counseling by a pharmacist is not usually required. These products are indicated for minor ailments or symptoms that may be easily recognised by the patient and which do not require medical diagnoses or monitoring.

- ***SCHEDULE 1*** - These are pharmacy-only OTC medicines that are known to be safe in use, but where advice or counseling by a pharmacist may be required. These products are indicated for minor diseases or symptoms which can be easily recognised by the patient and which do not require medical diagnoses or monitoring.

- ***SCHEDULE 2*** - These are pharmacy-only OTC medicine that are known to be safe in use but may only be supplied following intervention by a pharmacist. Products in this category are indicated for minor diseases or symptoms that can be recognised by the patient and verified by a pharmacist.

- ***SCHEDULE 3*** -These are prescription-only medicine indicated for use in diseases or conditions that require professional medical, dental or veterinary diagnoses and management, but do not require close medical monitoring after treatment has been initiated. These substances are often indicated for chronic use and their long-term safety and efficacy are well established. Pharmacists are allowed to dispense some of these drugs (which include anti-inflammatory drugs) for a period of 5 days.

- ***SCHEDULE 4*** - These are prescription-only medicine indicated for use in diseases or conditions that require professional medical, dental or veterinary diagnoses, management and monitoring. The safety and efficacy of these substances may require further evaluation.

- ***SCHEDULE 5*** - These are prescription-only medicine that may have a low to moderate potential for abuse or dependence and which necessitates medical, dental or veterinary management and supervision as well as control of supply.

- ***SCHEDULE 6*** - These are prescription-only medicine with a moderate to high potential for abuse or dependence and which necessitates close medical management and supervision and strict control over supply (Doms, 2007).

For example, probiotics are considered to be complementary medicine. Probiotics are products containing potentially beneficial bacteria used to treat, amongst others, gastro-intestinal disorders such as diarrhoea. Lactobacillus acidophilus and bifidus when used therapeutically are listed in Schedule 1 to the Medicines Act. They have been used extensively in dairy products.

Applying the Schedule 1 rules - Lactobacillus through its history of prolonged usage in food has been shown to be safe. Diarrhoea is easily recognisable albeit that in children professional guidance is advisable. They have a tendency to de-hydrate quickly. In this case it is not the substance that requires a precautionary measure but the condition needing treatment. Generally acute diarrhoea does not necessitate a medical diagnosis or monitoring.

The scheduling status of a medicine is dependant on a number of factors and not only the fact that the active ingredient appears in the schedules to the Medicines Act. Its intended usage plays a part. Each medicine must be assessed on its own

merits. It should also be noted that the schedule of a medicine has nothing to do with the price of that medicine. There are other factors that influence the end retail price of drugs to consumers.

2.3 PRICE CONTROL AND THE ECONOMICS INVOLVED

Price control can be described as an government dictated ceiling on the prices of essential consumer goods, to keep cost of living within a manageable range (Business dictionary, 2007). It is basically a legal limitation placed on market prices by a government.

2.3.1 The prices of medicine

South Africa has had two distinct markets for medicine and other controlled substances: the private sector and the state sector. Around seven million South Africans are members of medical aid schemes and another 13.5 million have access of some description to healthcare in the private sector. The state sector is thought to provide healthcare services to a potential 33 million South Africans through the various state health facilities (Davie & Urbach, 2006:3).

Many people use both private and public health services. These people include especially those that purchase traditional and other natural medicines but use public hospitals when they need surgery or specialised treatments. There is a considerable overlap. There are also many people that hardly ever use medication or other health services, so determining the respective healthcare contributions of the public and private sectors is very difficult.

In recent media attention in South Africa on the issue of drug pricing, the DOH has claimed that South Africa has amongst the highest prices in the world. This

is their main motivation for justifying price control. Drug prices are high because of the following primary reasons (Rietveld & Haaijer-Ruskamp, 2002:29):

- Rigorous standards to protect the public from poor quality, unsafe and inefficacious drugs require manufacturers to invest in expensive research and development programs. Those drugs that pass the standards are priced so that a company obtains a return sufficient to cover its investment in the drugs themselves, the costs of the drug research projects that failed, the costs of promotion, investment in future research and development, and still yield the shareholders an attractive dividend.

- There are certain factors which tend to create monopolies. One such factor is the quality standard already referred to, which imposes significant entry barriers for new market participants. Alongside patent protection it allows pharmaceutical companies to build up monopolistic positions within important segments of the pharmaceutical market. Products that improve health are relatively inelastic commodities, and strong demand enables the monopoly holder to command a high price.

- There are third party payers (medical schemes), rather than the patient, that pay for drugs, making the consumer less price sensitive.

- As with all products of which the consumer has no real understanding, he or she tends to judge the quality and perhaps also the efficacy of a drug on the basis of its price: a higher price is thought to indicate better quality and, vice versa; a low price (as in the case of generics) is believed to signify a lower standard.

In the market for more typical consumer products, the "fair" price of an item is the result of an ongoing process of negotiation between the supplier and the user. The outcome of such a process depends on the strength of the parties involved

relative to each other. In the pharmaceutical market, by contrast, there can be no real negotiation between the patient and the supplier of drugs. The patient is simply not in a position to enter into such negotiation, as he would have been (either individually or by contributing to market resistance) when buying another type of product (Rietveld & Haaijer-Ruskamp, 2002:30).

Free pricing of pharmaceuticals is usually associated with high price levels. The retail price of a medicine is not determined by the real costs of its development, production and distribution, but as with any other commercial products by what the market will bear. From the perspective of safeguarding universal access to health care, it is however necessary that prices are kept at reasonable levels (Rietveld & Haaijer-Ruskamp, 2002:29).

Most European countries, even those that at one time maintained a system of free pricing, have therefore implemented some form of price control (Rietveld & Haaijer-Ruskamp, 2002:30). It should however be borne in mind that price control measures are just one of the instruments available to governments to contain the costs of the country's health care. Several alternative methods are used to contain the prices of pharmaceuticals. All these methods have in common that regulators attempt to calculate a price for pharmaceuticals which is "correct" or "fair" to the various parties concerned.

The South African government's primary motivation for imposing a new form of price control is to "ensure reasonable access to affordable medicine". Any discussion of drug prices in South Africa should take into account the price discrimination that has traditionally occurred, with drug manufacturers selling drugs at relatively high prices to the private sector and at greatly discounted prices to the state sector. The fact that manufacturers have been able to price-discriminate has meant that overall, drug prices in South Africa are amongst the lowest in the world (Louw, Davie & Nolutshungu, 2006).

2.3.2 Price control of medicine: a historical perspective

For many, price control may seem like a tempting solution to hold down healthcare costs. However, past attempts at price control teach us a very different lesson - this is one government policy guaranteed to do more harm than good. In fact, throughout history, price control have been a notorious failure, bringing on economic stagnation and decline, rationing, hoarding, black marketing and organised crime, assaults on civil liberties, and even inflation, not to mention untold waste, graft, and human suffering.

- In Egypt during the Third Century B.C. there was a real omnipresence of the state in regulating grain production and distribution. All prices were fixed at all levels. This control took on frightening proportions. There was a whole army of inspectors. Egyptian farmers became so infuriated with the price control inspectors that many of them simply left their farms. By the end of the century the Egyptian economy collapsed as did her political stability.

- In Babylon some 4,000 years ago the Code of Hammurabi was a maze of price control regulations. "If a man hire a field-labourer, he shall give him eight gur of corn per annum"; "If a man hire a herdsman, he shall give him six gur of corn per annum"; "If a man hire a sixty-ton boat, he shall give a sixth part of a shekel of silver per diem for her hire." And on and on and on. Such laws "smothered economic progress in the empire for many centuries," as the historical record describes. Once these laws were laid down, "there was a remarkable change in the fortunes of the people."

- Ancient Greece also imposed price control on grain and established "an army of grain inspectors appointed for the purpose of setting the price of

grain at a level the Athenian government thought to be just." Greek price controls inevitably led to grain shortages, but ancient entrepreneurs saved thousands from starvation by evading these unjust laws. Despite the imposition of the death penalty for evading Greek price control laws, the laws "were almost impossible to enforce." The shortages created by the price control laws created black market profit opportunities, to the great benefit of the public (Scheuttinger & Butler, 1979 *in* Jean-Philippe Levy).

- In 284 A.D. the Roman emperor Diocletian created inflation by placing too much money in circulation, and then "fixed the maximum prices at which beef, grain, eggs, clothing and other articles could be sold, and prescribed the penalty of death for anyone who disposed of his wares at a higher figure." The results, as Schuettinger and Butler explain, quoting an ancient historian, were that "the people brought provisions no more to markets, since they could not get a reasonable price for them and this increased the dearth so much, that at last after many had died by it, the law itself was set aside."

- Centuries later, during the siege of Antwerp in 1584, the Spanish blockaded the city and food prices rose sharply. The city's government imposed price controls, and with no one willing to risk being killed to smuggle goods past Spanish guns, all goods suddenly vanished. Facing starvation, the desperate citizenry was forced to surrender (Fiske, 1904).

- During World War II, the Roosevelt administration created the Office of Price Administration, employing some 64,000 people plus over 100,000 volunteer "price watchers," to maintain across-the-board price controls

while all manner of goods were rationed. While official inflation was relatively low, an expansive black market flourished, noncompliance was commonplace, and the government had to resort to filing some 260,000 lawsuits in a vain attempt to enforce its price controls. Furthermore, as economists Richard Vedder and Lowell Gallaway show in their award-winning book, *Out of Work*, real GNP dropped as a result of price controls during the period 1943-1946, delaying full economic recovery from the Great Depression until 1947, when price controls were finally lifted. Labour productivity was retarded during this period with a double-digit percentage of the labour force engaged in command-economy activity, in which workers received wages far *below* normal market compensation levels (Vedder & Gallaway, 1998).

- In 1971, President Nixon ordered price controls and appointed America's first "Czar" to enforce them, and with fewer goods being produced as a direct result of the removal of profit incentives, an energy crisis, a recession and double-digit inflation followed. Then in 1978, President Carter tried the same approach, only this time entitled "voluntary wage-price guidelines," and inflation rose again into the double digits (Higgs, 1987:252).

In fact, from Babylon's King Hammurabi to Presidents Richard Nixon and Jimmy Carter, the 38-century history of price controls is a recurring economics lesson for any modern Luddite seeking a quick fix to health care costs. Once controls are removed, prices almost always explode. Despite claims to the contrary, this same kind of disastrous impact found throughout the history of the use of price controls could be revisited with life-threatening consequences if recent proposals are adopted for government.

2.3.3 Types of price control

2.3.3.1 Direct price control

Direct price regulation often means that the ex-manufacturer drug price is approved by the regulator. Canada, France, Italy and South Africa all implement a form of direct price regulation. In Canada, for example, the Patent Medicines Prices Review Board (PMPRB) places an upper limit on the prices set by manufacturers for all patented medicines sold to hospitals, wholesalers, distributors and pharmacies. The PMPRB does not regulate the prices of generic scheduled drugs and nor does it regulate the prices of scheduled drugs charged by wholesalers, distributors or retailers. It considers a range of factors in the Canadian Patent Act and its own pricing guide to determine the price cap for patented medicines. These factors include ensuring that the new drug price is within a similar price range to similar drugs treating the same disease on the market; external price referencing for drugs in specified developed countries; and ensuring that the price that Canadians pay for a drug is never the highest in the world. Additionally, the PMPRB is given the power to review prices on an ongoing basis and to conduct an investigation if it is concerned that prices are too high. It is even given remedial powers to order a manufacturer to reduce the price of a drug and to offset revenues that the manufacturer might have received as a result of the excessive price. Direct price regulation can also occur through controls on firm revenue rather than drug prices. For example, in France the regulator first sets a target growth rate for general pharmaceutical expenditure and then negotiates a specific revenue limit with each firm. If a firm exceeds its revenue limit its drug prices are reduced. This is thought to give the firm some flexibility in individual drug pricing while keeping drug prices within reasonable limits and reducing the administrative costs of negotiating prices for each individual drug (Williams, 2007:8)

2.3.3.2 Indirect price control

Indirect price regulation allows relatively free pricing and controls government expenditure on drugs by way of reimbursement schemes. For example, in Germany, The Netherlands, Denmark and New Zealand the regulators set a reference price limit on reimbursement (reimbursement price). Drugs are grouped together in therapeutic groups and a single reimbursement price is set for each therapeutic group. If a manufacturer sets a drug price greater than the reimbursement price then the consumer has to pay the difference. In Germany, in practice it seems that manufacturers are unlikely to charge above the reimbursement price as physicians have to explain to patients why an extra charge is necessary and demand becomes highly price elastic. A further method of indirect price regulation is through profit regulation. In the United Kingdom (UK), the Pharmaceutical Price Regulation Scheme (PPRS) regulates the profits made by pharmaceutical manufacturers which sell drugs to the National Health Service. For companies which have capital in the UK the negotiations centre on what is a reasonable rate of return on capital employed. Companies which do not have capital in the UK negotiate on the basis of a reasonable rate of return on sales. The profit range is set and pharmaceutical manufacturers are free to determine drug prices as long as their profits are less than or equal to the percentage agreed upon. The PPRS does not apply to generic drugs (Williams, 2007:9)

2.3.3.3 Introducing competition into the market

Competition may be encouraged in a drug price regulatory scheme. For example, in Japan the government sets the reimbursement price for drugs prescribed by physicians. If a drug manufacturer sells to the physician at a price lower than the reimbursement price the physician may retain the difference between the reimbursement price and the ex-manufacturer price. This stimulates competition between drug manufacturers. The government then conducts a review of drug prices every two years where it considers the difference between reimbursement price and ex-manufacturer price, and if this difference is unreasonable it lowers the reimbursement price. As a result, in the long term, prices are pushed down to their lowest sustainable level. Competition in the pharmaceutical market may also be achieved through patient co-payment for drugs as this will ensure that consumers are price sensitive. If patients contribute to a portion of drug expenditure the demand is likely to be more price elastic and drug manufacturers are likely to reduce prices accordingly. Consumers may also form powerful bargaining collectives which are able to negotiate lower drug prices if they buy in bulk. Practically, this occurs through pharmaceutical benefit managers (Williams, 2007:8).

2.3.4 Economics of price controls

Figure 2.1 shows the separate welfare effects of both a governmentally imposed price ceiling and a price floor in a competitive industry. For purposes of ease of exposition, the supply and demand functions in Figure 2.1 were drawn as linear. There is little empirical evidence concerning the shape of either the demand function or the supply function for pharmaceuticals in the real world.

It should be noted that any welfare implications depend on the elasticity of demand for pharmaceutical products and the elasticity of supply. Demand elasticity is dependent on the existence and kinds of substitutes for the product and economic complements to the product, as well as the principal agent the physician prescribes for the patient.

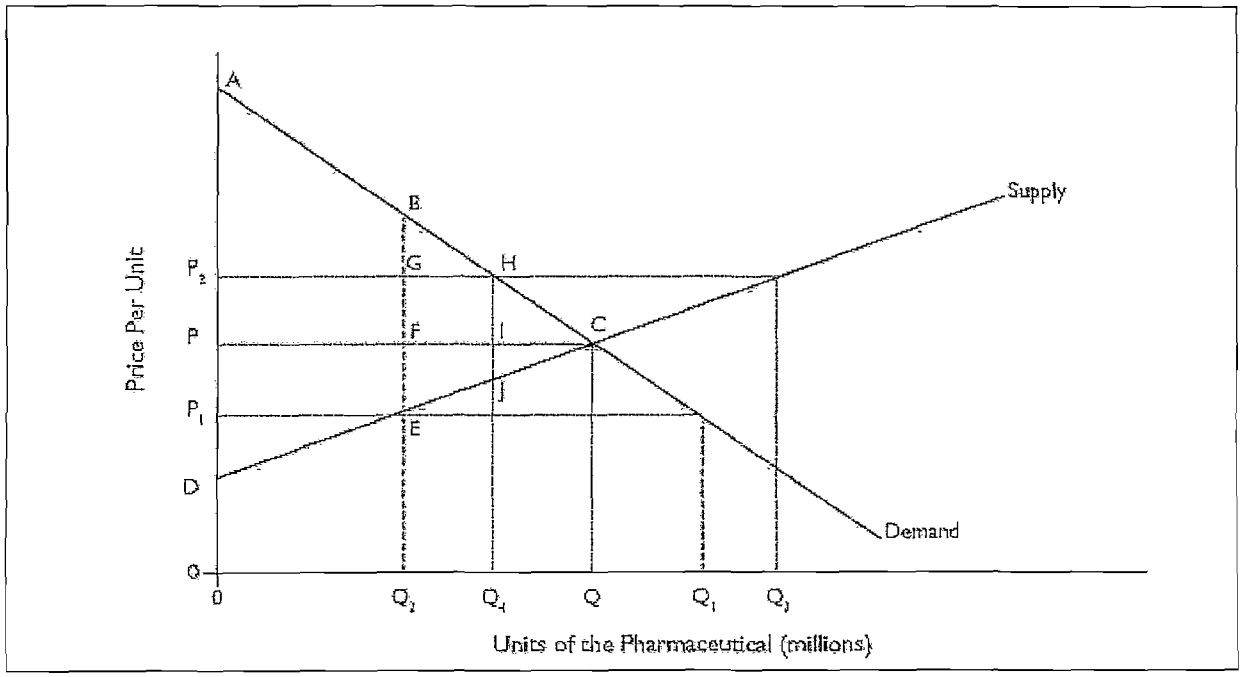
In a freely competitive pharmaceutical market, the quantity of the pharmaceuticals supplied and demanded would be Q and its price would be P. The area under the demand curve measures how much consumers value the pharmaceutical (i.e., their willingness and ability to pay for it). If they can obtain the pharmaceutical at a price of E but some consumers would be willing and able to pay even more (as indicated by the triangle ACP in FIGURE 2.1), then we can say that these persons enjoy a consumer surplus of the amount ACP (Vogel, 2004:1331).

Likewise, the supply curve shows the various prices at which the suppliers of the pharmaceutical would be willing and able to supply it. If the price of the pharmaceutical is P in Figure 2.1, then suppliers of the pharmaceutical can be said to enjoy a producer surplus of the amount DCP. If a pharmaceutical regulatory body were to decide that the maximum allowable price for the pharmaceutical would be only P1 in Figure 2.1, then the quantity demanded of the pharmaceutical would increase to Q1, but the quantity supplied would decrease to Q2. The imposition of the price ceiling would create a net transfer of resources from sellers to buyers, as measured by the rectangle PFEP1 in Figure 2.1. The price ceiling would also cause a welfare loss for the buyers of the pharmaceutical who would have been willing and able to pay for the quantity Q2 to Q of the pharmaceutical at the price of P1 but can no longer do so. This welfare loss is shown by the triangle BCE. The price ceiling also causes a welfare loss for the sellers who would have been willing and able to sell the additional quantity Q2 to Q of pharmaceuticals, but can no longer do so because of the imposition of the price ceiling. This welfare loss is shown by the triangle ECF in Figure 2.1.

Economists refer to triangles BCF and ECF as "deadweight welfare losses (Vogel, 2004:1331).

The demand for most forms of healthcare has been measured to be less price sensitive (elastic) than the demand for many other goods and services that are consumed. The demand for pharmaceuticals, while slightly more price sensitive than the demand for hospital and physician services (both of which are well insured, with consequent lower out-of-pocket costs to patients), nevertheless remains price insensitive (price inelastic), because the pharmaceuticals are highly valued for their preventive or health-producing effects. The majority of pharmaceutical price controls that currently exist in the EU can be characterised as price ceilings (Vogel, 2004:1331).

FIGURE 2.1 GOVERNMENTALLY IMPOSED PRICE CEILING AND PRICE FLOOR



Source: Vogel (2004:1331)

The demand and supply functions in Figure 2.1 were drawn as linear to facilitate the exposition. If the demand or supply functions, in reality, were nonlinear and if the demand function were more price inelastic than the supply function, then it could be shown that when the free-market price of P is reduced to Pl by a governmentally imposed price ceiling, the producers of this pharmaceutical would lose the rectangle PFEP1 and the triangle ECF in producer surplus. Consumers would gain the rectangle PFEP1 but lose the triangle BCF in consumer surplus (Vogel, 2004:1331).

Because the area of the triangle BCF (the consumer loss) would be much larger with an inelastic demand function than the area of the rectangle PFEP1 (the consumer gain), there would be a net welfare loss to both the producers and the consumers of this pharmaceutical, caused by the governmentally imposed price ceiling. Thus, both price floors and price ceilings are associated with welfare losses to consumers as well as producers (Vogel, 2004:1331).

2.4 NEGATIVE CONSEQUENCES OF PRICE CONTROLS

The most fundamental problem with price controls, be they for medicine or for any other product, is that they interfere with the normal pricing mechanism and the signals that prices send to buyers and sellers. If consumers appear willing to buy more of a product, then manufacturers will have an incentive to produce more of that good and more manufacturers will enter the market. Because of competition for consumer demand, manufacturers are likely to research the product so as to improve it and provide greater choice for consumers. As prices rise, due to increased consumer demand, we expect supply to increase as the dynamic market adjusts to satisfy the demand. The determination of market prices through continual changes in demand and supply is therefore the basic building block of economics.

Price controls distort pricing mechanisms and interrupt the dynamic demand and supply process. Consumer tastes and needs change continuously and as demand for a particular product rises or falls, so the price rises and falls, sending signals to manufacturers to adjust the supply of the product in a never-ending trend towards an equilibrium price. Government-set prices are usually arrived at after a negotiated political process, but once set, that fixed price cannot adjust to account for the ongoing changes in demand for the product. If a price is set too high by government, the supply of that product will exceed demand. For instance, European governments set the price of many agricultural products above the price that would be achieved through a normal market process. This means that European farmers produce far too much milk, maize and pork to the detriment of consumers in their role as taxpayers (Louw *et al.,* 2006).

If a government (under normal circumstances) sets the price of a good below the equilibrium price level, consumers are signalled to consume more of the product than manufacturers would normally produce at that price. With increased demand and without any incentive to increase supply, shortages arise which in turn reduce consumer choice and lead to welfare losses. Because not enough of the good is sold, a deadweight loss arises because income is lost to the producer and the consumer is left without the good he or she desires.

Indeed food is more important for human survival and welfare than medicine and the government quite correctly removed the many price controls on agricultural products, precisely because of the damaging effects on the economy and on consumers. It may be argued that healthcare and medicine are somehow different to other goods and that therefore price controls are justified. However, the market for medicine and healthcare are subject to the same laws of economics as any other good or service, provided that the specific influence of medicine is taken into account.

By interfering in the normal market process, price controls discourages normal price competition and stifle innovation, research and development. Without any normal price signals, manufacturers cannot respond to the needs of consumers and are therefore often unwilling or unable to improve their product and to compete effectively in order to meet the needs of consumers. In fact, given the importance of good healthcare for human wellbeing and the highly damaging effects of price controls, it is suggested that price controls are NOT imposed on medicine unless an in-depth study of the price elasticity in price controls-circumstances indicate otherwise.

2.4.1 Reduced medicine access

Patricia Danzon of the University of Pennsylvania has analysed the effect of price controls on the registrations of new drugs in various countries. Her study shows that due to the dangers of parallel importation from countries that have regulations that ensure low drug prices, medicine manufacturers prefer to delay or cancel the launch of a particular product in price controls countries (Danzon, Wang & Wang, 2003:33).

Danzon found that between 1994 and 1998 there were 85 NCE (New Chemical Entities) launched in the UK (United Kingdom) and the US (United States). Out of a maximum possible registration of 2,125 registrations of these NCEs in 25 countries, only 55% (1,167) were actually registered. The research showed that those countries with lower expected prices or smaller expected market size, experience longer time lags and delays in new drug registrations (Danzon *et al.*, 2003:33).

Danzon's research is supported by evidence from Canada, which suggests that drugs that are widely available in the US are simply not registered and are therefore unavailable in Canada. It is widely reported that US border states

regularly treat Canadian citizens that are unable to access treatment at home. In some cases, the delays in registering new medicine due to the price controls, benefit domestic drug producers (Danzon *et al.*, 2003:33).

As John Calfee explains: "*Advanced nations with pervasive pharmaceutical price controls, such as Japan, have for decades denied innovative drugs to their citizens even as domestic pharmaceutical firms prosper by pursuing low-risk research on products of marginal value*" (Danzon *et al.*, 2003:33).

Apart from the regulated drug prices, which deter the registration of new drugs, the lengthy process undertaken by bureaucracies to determine 'appropriate' drug prices, adds to the delays in gaining access to drugs. For instance, in some European countries, such as Belgium, patients can wait for more than 2 years longer to access a medicine that is already available in the UK and Germany (Louw *et al.,* 2006). These delays do not only harm patients by denying them important medical treatment, but add to the costs of the manufacturing firms that are prevented from selling their new products. This in turn puts pressure on the companies to recover their lost revenue elsewhere, further distorting medicine prices. In recent years, the volatile foreign exchange rate has affected medicine prices, mostly pushing them up. Manufacturers and importers are likely to be negatively affected by the proposal to only allow an annual increase in drug prices as they will be unable to respond effectively to changes in the exchange rate. This acts as a further disincentive to the marketing of drugs in South Africa.

Allowing patients to access the latest innovative medicine is vitally important. While generic medicine plays a prominent role in any healthcare system, the value of new and innovative medicine and medical technology cannot be overstated. For instance, research has revealed that one new HIV (Human Immunodeficiency Virus) / AIDS (Acquired Immune Deficiency Syndrome) drug prevents around 6,000 deaths in the following year and ultimately prevents 34,000 deaths. While it is true that newer drugs tend to cost more than older, off-

patent drugs (by an average of 24 percent), the former can reduce the number of productive work days lost by 21,3 percent. Newer drugs can also reduce the length of time a patient has to spend in hospital. Given that hospital care (which includes the cost of medical staff, equipment, food, linen, etc.) is often very costly, any financial benefit from using older, off-patent drugs can be extinguished by the cost of extra days spent in hospital (Louw *et al.,* 2006).

2.4.2 Reduced research and development

Perhaps one of the most important and damaging long-term effects of drug price regulations is the impact they have on research and development. This impact is also one of the most difficult to measure and is often unseen because government and consumers are not aware of the lost innovation that would have taken place in the absence of price controls.

Perhaps the most telling evidence of the impact of price controls on research and development is the movement of research from Europe, which has a variety of price controls, to the US, which has few price controls. Between 1988 and 1998, the US share of production of best selling drugs increased from 19 to 33 and in 1998 the US produced 8 of the 10 top-selling drugs. Some European companies, such as Glaxo Smith-Klein (GSK) and Novartis, have moved much of their research and development capacity to the US (Calfee, 2001:1062).

While price controls may bring some benefits to consumers in the short term through lower drug prices, the long-term costs in reduced research and development and fewer innovative drugs are considerable.

Bain and company, an international management consultancy conducted research into the effects of drug price controls in Germany.

Germany introduced reference-based drug pricing in 1989 with the aim of reducing drug expenditure. Bain's research revealed that the price regulations reduced the German government's spending on drugs by $19 billion in 2002. These savings however need to be balanced against the economic costs of poorer health outcomes resulting from the fact that German patients did not have access to the latest innovative therapies. In addition, reduced research and development in Germany, a reduction in jobs and investment, and lower corporate taxes to government, cost the economy around $22billion. The result is that the drug price regulations, rather than saving the country money, cost it around $3 billion (Lictenberg, 2003).

2.4.3 Market distortions and the black market

Apart from the increased overall costs of healthcare, reduced availability of drugs and reduced research and development, drug price regulations in many countries have exacerbated the parallel trade in drugs and the black market for medicines. Artificially low drug prices in one country provide incentives for entrepreneurs to export those drugs (perhaps illegally) to countries that have higher drug prices. This can reduce income of the drug manufacturer by reducing its ability to price discriminate. It can also lead to poorer health outcomes as the manufacturer has reduced control over the product sold in the higher priced market. With products such as medicine it is often vital for the manufacturer to control the supply chain, to ensure that the product is safely transported, and that it complies with the various regulations governing its use (Legrande, 1978:48)

Due to the economic distortions created by drug price controls, patients frequently do not have access to adequate healthcare. In the United Kingdom, rationing of healthcare services due to price controls has created shortages which more often than not affect the poorer sections of society. The wealthy North East Thames region near London has 27 percent more doctors and

dentists, 15 percent more hospital beds and 12 percent higher health spending per capita than the rural Trent area in North East England. Price controls have not resulted in greater equality in access to healthcare in the UK. The rationing of healthcare services has meant that the pattern of healthcare consumption has changed little since 1948 when the highest social class consumed 40% more services than the lowest social class (The Business Journal, 2002).

2.5 FRAMEWORK FOR PRICE CONTROL IN SOUTH ARICA

In South Africa the Medicines and Related Substances Act 101 of 1965 (Medicines Act), the Competition Act 89 of 1998 (Competition Act) and the Patents Act 57 of 1978 (Patents Act) are relevant to pharmaceutical price regulation at an ex-manufacturer level. Together, these Acts regulate the ex-manufacturer price of medicines, the circumstances in which generic medicines may be imported by parallel importers, and the conditions for the granting of compulsory licenses to a manufacturer that is not a patent holder (Williams, 2007:3-4).

The Pricing Regulations, promulgated under 22G of the Medicines Act, apply to the sale of medicines privately (sales to the state occur through tender processes). The Constitutional Court held that the purpose of the 22G and the Pricing Regulations was to 'promote the availability of safe and effective drugs at the lowest possible cost'. The manufacturer or the importer (referred to collectively as manufacturer) was required to set the single exit price (SEP) of each medicine upon the commencement of the Pricing Regulations in May 2004. The SEP consists of the ex-manufacturer price of the medicine, the logistics fee (the fee paid to distributors or wholesalers of a medicine), and value-added tax. For the first year of implementation, the Pricing Regulations provided a formula determining the maximum SEP that was to be set by the manufacturer, taking into account the price at which the medicine was sold and the discounts offered

in 2003 and, where necessary, the price of the medicine in other countries. The formula was an attempt to determine the lowest fair price for the medicine, taking into account what manufacturers actually need to cover their costs and what they charge for the medicine both in South Africa and in other countries. Once the SEP is set, it may be increased annually using reg 7 (if there has been no Ministerial determination of the maximum increase) or it may be increased quarterly using reg 8(3) (if there has been a Ministerial determination of the maximum increase) (Williams, 2007:4).

Provision is made for the setting of a maximum logistics fee to be charged by wholesalers or distributors, and for a maximum dispensing fee to be charged by retailers. In this way, the Pricing Regulations attempt to introduce transparency of pricing into most levels of the supply chain. The obvious omission relates to manufacturers who set the ex-manufacturer price on their own accord. This, however, is about to change as the draft Methodology for International Benchmarking of the Prices of Medicines13 (Draft Methodology) indicates that the ex-manufacturer price for medicines will be equal to the lowest price of the equivalent medicine in the 'largest ambulatory sector' in either New Zealand, Australia, Spain, Canada or South Africa (benchmark countries). 'Ambulatory sector' is not defined (and it does not relate to walking) (Williams, 2007:5).

As a result, it is unclear if it will result in the public sector being considered the largest ambulatory sector in the benchmark countries, or if the distinction between ambulatory sectors will be made on another basis. The final version of the international benchmarking methodology is likely to reduce the SEP of medicines in South Africa, and some transparency of pricing may be introduced at the ex-manufacturer pricing level (Williams, 2007:5).

2.6 PRICE CONTROL IN SOUTH AFRICA

The ANC (African National Congress) and the ANC-led government are determined to continue efforts to make medicine and healthcare in general more affordable, so that it can be accessible to all South Africans. It is also committed to ensure that the country maintains a viable retail pharmacy industry. The ANC claims that the new price controls for medicine as set out in the Pricing Regulations is effective in reducing the prices of medicines (ANC Today, 2005).

How does the government intend making medicine more affordable? The Medicine Act introduces four important elements to contain healthcare costs to government and the private sector (Thom, 2001).

- Generic substitution of medicine that is no longer under patent is an important part of the law. This means that a pharmacist must offer a patient the generic version of a brand name medicine. A generic medicine is a drug with the same quality active ingredient as a brand name drug.

- Another element of the Medicines Act is the introduction of a pricing committee that will set up transparent pricing mechanisms. Pharmaceutical companies will have to justify the prices they charge.

- The third part of this law is the parallel importation provision (known as section 15C of the Medicines Act). This provision allows the government to import the same medicine sold by an identical company (or its licensee) at a lower price in another country.

- The Medicines Act also allows international tendering for medicines used in the public sector.

The costs associated with the distribution of drugs consist of the mark-ups of the wholesalers and the pharmacies. Distribution margins are usually regulated, as they contribute considerably to the consumer price of drugs; these margins can represent more than 40% of the price ultimately paid (Rietveld & Haaijer-Ruskamp, 2002:33).

2.6.1 Limiting wholesale distribution margins

There are numerous wholesalers or distributors of drugs in South Africa. Pharmacies consulted in this study do business with the following distributors:

- International Healthcare Distributors (IHD)
- Kemco (Pretoria, Bloemfontein, Newcastle)
- United Pharmaceutical Distributors (UPD)
- Transpharm
- Randpharm
- Adcock

Registered wholesalers or distributors are the only source for pharmacies to legally acquire scheduled drugs in South Africa. They are an important part of any pharmacy's value chain and therefore play a significant role in the end price of drugs to consumers. It is therefore no wonder that they are also targeted by the DOH (Mochicko, 2006).

Limiting the wholesale margin can be achieved either:

- by allowing the wholesaler a maximum margin for its services; or

- by setting a maximum for the price at which the wholesaler can sell a product to pharmacies called the Single Exit Price (SEP).

A combined approach can also be adopted in which a maximum is set for the total distribution mark-up; wholesalers and pharmacies then have to negotiate with one another for their share of this mark-up. An example is Romania, where a maximum is set for the total distribution mark-up, with subsidiary provisions setting a maximum margin for the wholesaler and a minimum margin for the pharmacy within this total mark-up (Rietveld & Haaijer-Ruskamp, 2002:34).

Pharmacists in South Africa had until the end of January 2007 to implement a new medicine pricing structure that will also allow drug manufacturers to increase their SEP by up to 5.2 percent for the first time since 2003. The single exit price is what pharmacies pay for medicine from suppliers or drug manufacturers. Under the new regulations, drug manufacturers could apply from 1 October 2007 to raise prices by up to 5.2 percent. But approvals may take time as the government is benchmarking prices against those in countries such as Australia, New Zealand, Canada and Spain (Mochicko, 2006).

2.6.2 Limiting pharmacy retailing margins

Systems of remuneration for pharmacies fall into two classes - the one being patient-oriented and the other (as in this study), being product-orientated. Many systems are in fact hybrid schemes, in which elements of both approaches are used.

Product-oriented remuneration systems for pharmacies can be divided into three categories (Rietveld & Haaijer-Ruskamp, 2002:34):

- **Fixed margin systems:** a fixed percentage mark-up is added to the wholesale prices of all dispensed medicines. This principle is widely used in competitive retailing systems; both in the United States of America, but also in more tightly regulated systems such that exist in Europe. In European markets, mark-ups are generally fixed and are re-negotiated periodically with governments. Retail mark-ups on prescription drugs vary, but are usually around 30%. Most countries refrain from regulating margins on OTC drugs, since for these the rules of the free market apply much more clearly than for prescription drugs. A pitfall with fixed margin systems is that the pharmacist may negotiate discounts on the wholesale price of a drug, thus increasing his gross margin without consumers necessarily benefiting by lower prices (although in some countries – like the USA – part of such a discount is indeed reflected in a lower consumer price). Some countries have therefore introduced systems to recover these discounts (e.g., the "claw back" system in the UK and The Netherlands) to the benefit of the National Health Service or its equivalent. Other countries, such as Denmark, have simply forbidden wholesalers and pharmacies from offering or accepting discounts (Rietveld & Haaijer-Ruskamp, 2002:34).

- **Mark-ups may be maximised instead of fixed:** this variation is inspired by the thought that third-party payers may negotiate lower margins and consequently lower prices with wholesalers and pharmacies. The effect of this negotiation will, however, depend on the respective bargaining powers of the parties; in practice, therefore, maximisation of the mark-up will not *per se* lead to a reduction in the consumer price. One of the arguments used against systems exerting such pressure on the retailer is the risk of lower quality service, such as a reduction in stock levels for high priced but essential medicines. In order to prevent a loss of service quality, countries may impose additional requirements on pharmacy operations

(such as an obligation to deliver any drug within a given time frame) (Rietveld & Haaijer-Ruskamp, 2002:34).

- **(3) Mark-ups may be digressive:** here the percentage mark-up decreases as the price of the drug increases. Usually the main purpose of digressive margins is to make it less attractive for the pharmacist to dispense high priced drugs than low priced drugs. The structure of margin rates differs greatly among the countries which have adopted such systems. Usually the rate differences take into account specific domestic price structures and consumption patterns (Rietveld & Haaijer-Ruskamp, 2002:34).

The DOH proposed that price controls as in Table 2.1 should be implemented by all retail pharmacies in South Africa. As it can be seen in the table, this is a perfect example of a digressive mark-up system. Under the regulations, pharmacies are allowed to charge a dispensing fee of R4 plus 33 percent of the single exit price of medications that cost less than R75. For drugs that cost between R75 and R250, the dispensing fee is set at R25 plus 6 percent. On medicine costing between R250 and R1 000, the dispensing fee is R33 plus 3 percent. On medication that costs R1 000 or more, the dispensing fee is R50 plus 1.5 percent of the price of the drug.

TABLE 2.1 PROPOSED DOH PRICE CONTROL

SA Government's Digressive Mark-up Strategy for Pharmacies				
	Price Breaks: SEP Price of Medicine (Incl. Vat)			
	< R75.00	R75 – R249.99	R250-R999.99	> R1000
Add % SEP	33.0%	6.0 %	3.0 %	1.5 %
Then: Fixed R	R4.00	R25.00	R33.00	R50.00

2.7 CONCLUSION

Soaring economic growth is regarded as the key to increasing income, living standards and reducing poverty. All the evidence now shows that an economic environment characterised by economic freedom is superior to any other in achieving these objectives. Not only does economic freedom result in the highest per capita income but it also improves all the other measures of human development, such as higher life expectancy, better literacy rates, improved sanitation, increased water sources and many other desirable social outcomes.

Price controls reduce the efficiency of any industry upon which they are imposed, but also ultimately harm their intended beneficiaries. While the government may have good intentions in wanting to increase access to medicine and good quality healthcare, its proposals will have many unintended consequences that will in effect reduce access to medicine and compromise South Africa's healthcare system. In the longer term, consumers and especially the poor in South Africa will be made worse off by the imposition of price controls.

The general case against price controls is clear. The history of price control (running back to ancient times) is extremely poor. Price controls inflate demand, depresses supply, create shortages, shift activity to unregulated sectors, and encourage wasteful avoidance and evasion activity. Price controls also inevitably drifts toward more complicated controls, entrench vested interests, take on a life of their own, and become extremely difficult to dismantle. Price control has the same impact on healthcare. Massive waiting lists, care delayed and denied, disincentives for research and development, and limited access to new technologies and treatments are standard.

For many, price controls may seem like a tempting solution to holding down health care costs. However, past attempts at price controls teach us a very

different lesson - this is one government policy guaranteed to do more harm than good. Despite claims to the contrary, this same kind of disastrous impact found throughout the history of the use of price controls will be revisited with life threatening consequences if recent proposals are adopted for government control of prices.

The first democratically elected government of South Africa (ANC) increased economic freedom and served the interest of consumers by removing the web of price controls and economic restrictions. To reverse this trend by reinstating price controls would be a damaging and backward move for the country and most importantly for consumers, both rich and poor. Retention of controls, whatever reason may be given for doing so, displays apartheid-style disrespect for the freedom and democratic rights of citizens and a complete lack of understanding of how wealth is created and transferred.

CHAPTER 3
EMPIRICAL STUDY

3.1 INTRODUCTION

The Department of Health (DOH) claims that the proposed price control is necessary to keep the prices of medicine affordable for all South Africans. They also claim that pharmacists will still earn a reasonable income with the implementation of price controls on drugs. The main objective in this chapter is to determine whether pharmacies will still earn a reasonable income and if they can operate under the circumstances imposed on them by the DOH.

The chapter will start off with a financial summary and some additional information about the pharmacies used in this research. The reader will then be introduced to some important financial terms that are vital in the pharmacy business. This will be followed by a price controls analysis that will give us the necessary data to convert to the income statements of the pharmacies. The Return on Equity (ROE) for the group of pharmacies will be calculated and the Single Exit Price (SEP) effect analysed to determine if the pharmacy industry is currently a promising option. A conclusion will then be made based on the effect of the price controls on the relevant financial success factors of a pharmacy.

3.2 METHOD OF RESEARCH

3.2.1 Case Study

The Pharmacy Stakeholders' Forum (PSF) represents approximately 80% of independent pharmacies in South Africa and is the largest representative body for pharmacists and pharmacies in the country. The request to acquire at least

five years' financial statements of pharmacies that would statistically represent the population of small pharmacies in South Africa in this study was eventually denied despite an earlier promise to supply the required information. This setback left no alternative but to request pharmacies on an individual basis to co-operate in a case study. Three pharmacies volunteered to supply the necessary information to be used in a case study to determine the effect of price controls on the profit margin and Return on Equity (ROE). Given the importance of the study, it is hoped that the PSF will be allowed to provide the required data in the near future for further in-depth studies to unaddressed questions.

Pharmacies investigated in the case study application were:

- 2 smaller retail pharmacies: Small Pharmacy 1 (SP1) and Small Pharmacy 2 (SP2).
- 1 Hyper Pharmacy (HP).

For the purpose of the study a ***"Small Pharmacy"*** is defined as a retail pharmacy which provides a service for approximately 20,000 to 40,000 customers annually. The size of a ***"Small Pharmacy's"*** premises covers approximately 150-250 square metres. A ***"Hyper Pharmacy"*** in this study is defined as a retail pharmacy which provides a service to approximately 40,000 customers annually with more than 600 square metres of retail space. In light of the sensitive nature of the aspects investigated as well as the competitive nature of the pharmacy trade, the names of the pharmacies will not be identified.

A summarised overview of the pharmacies as a group can be seen in Table 3.1. The "Front shop as % of Total Sales" is much higher in HP (32.08%) than in SP1 and SP2 (11-16%). Since price controls are applicable to the dispensary only, purchase and sales information were shown separately. Price control is only affecting the sales of the dispensary items and will therefore have no effect on the sales of the front shop.

It is important to have some financial background to completely understand the impact of this study. Included in table 3.2 is a quick reference and explanation of the more important financial terms used in this study.

TABLE 3.1: QUICK DATA OVERVIEW OF THE INDIVIDUAL PHARMACIES AND TOTAL GROUP

	SP1	SP2	HP	TOTAL GROUP
TOTAL SALES	4637369	5291088	14390967	24319424
Dispensary Sales	3895476	4697947	9773877	18367299
Front shop Sales	741893	593141	4617090	5952125
Dispensary sales as % of total sales	84.00%	88.79%	67.92%	75.53%
Front shop sales as % of total sales	16.00%	11.21%	32.08%	24.47%
TOTAL COST OF GOODS SOLD	3105398	3588760	9669675	16363833
Dispensary cost of goods sold	2726658	3325596	6892679	12944933
Front shop cost of goods sold	378740	263164	2776996	3418900
Cost of Sales %	66.96%	67.83%	67.19%	67.29%
Dispensary cost of sale as % of total sales	70.00%	70.79%	70.52%	70.48%
Front shop cost of sales as % of total sales	51.05%	44.37%	60.15%	57.44%
GROSS PROFIT	1531971	1702328	4721292	7955591
Dispensary gross profit	1168818	1372351	2881198	5422367
Front shop gross profit	363153	329977	1840094	2533225
Gross profit %	33.04%	32.17%	32.81%	32.71%
Dispensary gross profit %	30.00%	29.21%	29.48%	29.52%
Front shop gross profit %	48.95%	55.63%	39.85%	42.56%
TOTAL EXPENSES	1522159	1,525,735	3,116,829	6,164,723
Total expenses as % of total sales	32.82%	28.84%	21.66%	25.35%
NET PROFIT	9812	176,593	1,604,463	1,790,868
NET PROFIT AS % OF TOTAL SALES	0.21%	3.34%	11.15%	7.36%
Total customers	36677	36404	129474	202555
Average sale	126.44	145	111	120

3.2.2 Financial analysis

Financial statements are used to report on both a firm's position at a point in time and on its operations over some past period. However, the real value of financial statements lies in the fact that they can be used to help predict future earnings, dividends and free cash flow. From an investor's standpoint, predicting the future

is what financial analysis is all about (Brigham & Erhardt, 2005: 443). Generally, there are two types of financial analysis models, which are static and trend analysis models. For the static financial analysis model, its main characteristic is aimed at some significant financial ratios and compares the relationship between these significant **financial ratios** and the outcomes they expected. Financial ratios are important tools to predict business failures and it is commonly used to develop the models or classifiers. Financial analysis includes fiscal indicators and statistical forecasting which allow people to measure the current fiscal condition of the operating units and consequently predict trends for their future fiscal condition (Huang *et al.*, 2007: 1).

Financial analysis is therefore the computation of analytical ratios from financial statements and interpretation of these ratios to determine their trends as a basis for management decisions.

Analyzing financial data without a basis for comparison or in isolation is impossible (Libby *et al.*, 2004: 706) Fiscal indicators can be used to provide quantitative information to evaluate the fiscal conditions and compare current financial statements with that of previous years and also that of other similar units. The process of developing fiscal indicators provides a framework for assembling and analyzing information about enterprises on a regular basis (Huang *et al.*, 2007: 1).

In this study we will make use of a ratio and percentage analysis. Ratio analysis helps decision makers to identify significant relationships and make meaningful comparisons between companies. Analysts often compute "component percentages", which express each item on a financial statement as a percentage of a single base amount (the ratio denominator). To compute component percentages for the income statement, the base amount is net sales revenue and therefore each expense is expressed as a percentage of net sales revenue (Libby, *et al.*, 2004: 707).

Profitability is a primary measure of the overall success of a company and necessary for a company's survival. Several tests of profitability focus on measuring the adequacy of income by comparing it to other items reported on the financial statements. Return on equity (ROE) is a widely used measure of profitability (Libby *et al.*, 2004: 707) and will be further investigated in this study.

3.3 FINANCIAL TERMS

In the discussion of the case study application the following terms and abbreviations are used. It is important to notice that all data (in Rand value) in this case study is VAT (Value Added Tax) excluded.

Cost of Goods Sold (COGS) – The cost medicine (purchased from a wholesaler) sold by the pharmacy during a specific period.

Mark-up – The total profit added to SEP or the COGS.

Total Sales – The retail price (Cost + Mark-up) to the end consumer. This is basically what the customers paid annually for their medicine in the pharmacy.

Gross Profit – This is the Total Sales minus COGS.

Expenses – The cost of running a pharmacy.

Net Profit/Loss – Gross Profit (GP) minus Total Expenses will yield a Net Profit (positive value) or a Net Loss (negative value)

The pharmacies employed in this study make use of computer programs written by the software company Propharm. The software stores data of every script, sale and purchase done by the pharmacies. The researcher therefore (with permission of the pharmacy owners) used the Propharm software to conveniently gain access to crucial data for this study.

3.4 ANALYSIS OF THE EFFECT OF PRICE CONTROL ON THE SALES INCOME AND PROFITS

The aim of this analysis is to calculate the effect that the price controls will have on the sales income and profits of the dispensary (scheduled drugs) in the pharmacies. When the effect on the sales has been calculated we can convert the data to the financial statements to further calculate some critical and relevant financial data like Return on Equity (ROE) and profit percentages.

3.4.1 Price control effect on sales income

Small pharmacy 1

Table 3.2(A) shows the breakdown of the price controls analysis of SP1. The analysis was done using the ***PROPHARM software vendor version 1.6.86.*** The ***SCHEDULE*** column shows the medicine classified into their different schedules. In brackets the different methods by which the medicine is dispensed are shown for example:

- **(RX)** – Medicine that are dispensed by a pharmacist after a consultation with the patient. A complete family disease history is done and some interventions which are necessary. Certain schedule 3 medication is also allowed to be dispensed by a pharmacist if it is for a period not exceeding 5 days.

- **(DR)** - These are medicine prescribed by the doctor to be dispensed by the pharmacist.

TABLE 3.2 (A): BREAKDOWN OF PRICE CONTROLS ANALYSIS FOR SP1

SMALL PHARMACY 1					
SCHEDULE	NUMBER OF ITEMS	TOTAL SEP	TOTAL DOH	TOTAL ACTUAL	DOH -ACTUAL
S0 (DR)	2043	111,570.19	40,853.70	50,410.27	-9,556.57
S0 (RX)	1155	44,429.16	21,039.64	20,439.46	600.18
S1 (DR)	1035	49,829.74	19,884.16	24,144.14	-4,259.98
S1 (RX)	536	17,275.91	8,871.19	9,448.80	-577.61
S2 (DR)	6470	244,950.01	108,299.11	130,215.10	-21,915.99
S2 (RX)	4176	90,828.23	52,146.67	67,041.31	-14,894.64
S3 (DR)	8545	737,475.11	224,483.76	292,126.83	-67,643.07
S3 (RX)	1809	68,273.87	32,771.16	41,747.32	-8,976.16
S4 (DR)	9746	976,919.65	285,116.77	379,185.58	-94,068.81
S5 (DR)	4698	336,887.08	109,571.65	137,328.09	-27,756.44
S6 (DR)	260	48,218.97	9,457.87	16,731.26	-7,273.39
S7 (DR)	0	0.00	0.00	0.00	0.00
	40473	2,726,657.92	912,495.68	1,168,818.16	-256,322.48
		PER ITEM	22.55	28.88	-6.33

The ***NUMBER OF ITEMS*** column displays the annual number of items dispensed in the pharmacy categorised in their different schedules. The ***TOTAL SEP*** column is the Total Single Exit Price (basically the cost of goods sold). The ***TOTAL DOH*** column is the total profit margin in Rand value that the new price controls regulations would allow pharmacies to add to SEP in other to calculate a selling price for these medicine while the ***TOTAL ACTUAL*** is the profit margin in Rand value that SP1 actually received for dispensing the medicine. The ***DOH-ACTUAL*** column is the difference between the TOTAL DOH and the TOTAL ACTUAL COLUMN. Therefore a negative value will mean a loss for SP1 if the price controls would have been implemented by the DOH in 2006. The ***PER ITEM*** row is the total Gross Profit (GP) per item in Rand Value for the DOH and the ACTUAL dispensing of medicine.

TABLE 3.2 (B): MEDICINE PER ITEM CATEGORISED INTO SEP PRICE BREAKS OF NEW PRICE CONTROLS SYSTEM FOR SP1

SEP PRICE BREAKS	CUMULATIVE ITEMS	CUMULATIVE SEP
<R 75	28954	881,289.76
R75 - R 249.99	10059	1,295,341.66
R 250 - R 999.99	1436	517,285.85
≥ R 1000	24	32,740.64
	40473	2,726,657.91

Table 3.2 (B) categorises the total medicine per item into the new proposed price controls system. The ***CUMULATIVE ITEMS*** is the total items dispensed in each category and the ***CUMULATIVE SEP*** is the total single exit price (cost of goods) of the wholesalers. This information is necessary to determine the price breakdown of the scheduled drugs and the quantities that are dispensed in the relevant categories of the price controls, in order to calculate the allowed selling price of the drug, or, by the same token, DOH allows mark up up for the pharmacy.

This analysis was only done on the dispensary sales, for the price controls will only affect the profit margins of the scheduled drugs in the pharmacy. The Propharm analysis for SP1 as in Table 3.2 (A) showed the following:

- The total annual SEP (COGS) was R 2,726 657.92
- The DOH total profit margin in Rand value would be R 912 495.68 with an average profit per item of R 22.55.
- The actual profit margin in Rand value was R 1 168 818.16 with an average profit per item of R 28.88.

Conclusion: If the price controls was implemented the pharmacy would have a decrease in profit of R 256 322.48. It would be an average decrease in profit of R 6.33 per item.

Small Pharmacy 2

TABLE 3.3 (A): BREAKDOWN OF PRICE CONTROLS ANALYSIS FOR SP2

		SMALL PHARMACY 2			
SCHEDULE	NUMBER OF ITEMS	TOTAL SEP	TOTAL D.O.H	TOTAL ACTUAL	DOH - ACTUAL
S0 (DR)	2692	148,266.63	58,250.22	66,394.06	-8,143.84
S0 (RX)	2186	117,873.41	52,190.71	42,801.26	9,389.45
S1 (DR)	1239	51,960.01	23,516.30	23,513.50	2.80
S1 (RX)	435	14,843.86	7,512.73	7,463.11	49.62
S2 (DR)	10275	378,678.59	173,139.18	197,357.91	-24,218.73
S2 (RX)	2745	71,183.68	38,859.40	46,894.34	-8,034.94
S3 (DR)	10750	839,175.10	267,461.75	328,645.98	-61,184.23
S3 (RX)	1302	47,366.63	22,474.15	27,834.05	-5,359.90
S4 (DR)	13920	1,149,776.13	369,275.52	433,645.14	-64,369.62
S5 (DR)	6650	444,543.05	140,591.89	178,787.55	-38,195.66
S6 (DR)	206	61,928.92	8,123.37	19,013.78	-10,890.41
S7 (DR)	0	0.00	0.00	0.00	0.00
	52400	3,325,596.01	1,161,395.22	1,372,350.68	-210,955.46
		PER ITEM	22.16	26.19	-4.03

TABLE 3.3 (B): MEDICINE PER ITEM CATEGORISED INTO SEP PRICE BREAKS OF NEW PRICE CONTROLS SYSTEM FOR SP2

SEP PRICE BREAKS	CUMULATIVE ITEMS	CUMULATIVE SEP
<R 75	37911	1,157,420.60
R75 - R 249.99	13044	1,569,190.29
R 250 - R 999.99	1407	507,183.62
≥ R 1000	38	91,801.50
	52400	3,325,596.01

Following the same analysis process as in SP1 the Propharm analysis for SP2 as in Table 3.3(A) showed the following:

- The total annual SEP (COGS) was R 3 325 596.01
- The DOH total profit margin in Rand value would be R 1 161 395.22 with an average profit per item of R 22.16.
- The actual profit margin in Rand value was R 1 372 350.68 with an average profit per item of R 26.19.

- The DOH total profit margin in Rand value would be R 2 290 730.76 with an average profit per item of R 22.38.
- The actual profit margin in Rand value was R 2 881 197.66 with an average profit per item of R 28.15.

Conclusion: If the price controls was implemented the pharmacy would have a decrease in profit of R 590 466.90. It would be an average decrease in profit of R 5.77 per item.

Total Group

The Propharm consolidate analysis for the TOTAL GROUP as in Table 3.5(A) showed the following:

- The total annual SEP (COGS) was R 12 944 932.92.
- The DOH total profit margin in Rand value would be R 4 363 621.66 with an average profit per item of R 22.36,
- The actual profit margin in Rand value was R 5 422 366.50 with an average profit per item of R 27.77.

Conclusion: If the price controls was implemented the pharmacy would have a decrease in profit of R 1 057 744.84. It would be an average decrease in profit of R 5.42 per item.

TABLE 3.5 (A): BREAKDOWN OF PRICE CONTROLS ANALYSIS FOR THE TOTAL GROUP

TOTAL GROUP					
SCHEDULE	NUMBER OF ITEMS	TOTAL SEP	TOTAL D.O.H	TOTAL ACTUAL	DOH - ACTUAL
S0 (DR)	10476	590888.56	214524.55	268423.2	-53898.65
S0 (RX)	9988	513786.19	224505.19	180235.08	44270.11
S1 (DR)	4751	199478.14	89095.26	96161.43	-7066.17
S1 (RX)	2895	95314.32	48658.01	50402	-1743.99
S2 (DR)	32119	1187397.55	535123.97	637377.68	-102253.71
S2 (RX)	18774	482916.38	262430.35	320581.47	-58151.12
S3 (DR)	37060	3315693.52	969356.57	1273474.21	-304117.64
S3 (DR)	7187	292506.12	133857.83	164474.93	-30617.1
S4 (RX)	50334	4502839.56	1375654.88	1752936.32	-377281.44
S5 (RX)	20908	1585320	483030.68	622505.33	-139474.65
S6 (RX)	735	178792.58	28384.37	55794.85	-27410.48
S7 (RX)	0	0	0	0	0
	195227	12,944,932.92	4,364,621.66	5,422,366.50	-1,057,744.84
		PER ITEM	22.36	27.77	-5.42

TABLE 3.5 (B): MEDICINE PER ITEM CATEGORISED INTO SEP PRICE BREAKS OF NEW PRICE CONTROLS SYSTEM FOR THE TOTAL GROUP

SEP PRICE BREAKS	CUMULATIVE ITEMS	CUMULATIVE SEP
<R 75	140688	4267537.82
R75 - R 249.99	47617	5983398.43
R 250 - R 999.99	6807	2490411.25
≥ R 1000	115	203585.39
	195227	12944932.89

One should note that the effect of the price controls on the average loss per item in SP2 is the lowest. This could be due to the mix of scheduled medicine which can differ from pharmacy to pharmacy. This will usually depend on what the doctors in the area prefer to prescribe. It is clear that there will be a major net loss present in all the pharmacies if the price controls were to be implemented. In the group there will be over a million rand lost with an average loss of R 5.42 per item. This could be fatal to any business as a going concern or as a business with a fair ROE. For this reason, this matter will further be investigated in the financial statements.

3.4.2 Income statement analysis (actual)

For the purpose of this section actual annual income statements for 2006 of the pharmacies were used as a control. The next step was to determine the effect that the price controls would have had on the total sales and key financial factors in the income statement if the price controls was already in force in 2006. A revised experimental income statement taking price controls into account was then created for the pharmacies. The experimental statements were then compared to the control statements to determine the effects of the price controls.

Figure 3.1 (A) reflects the income statements for SP1 and SP2 for the year ended 2006 followed by the income statements for the year ended 2006 of HP and the TOTAL GROUP in Figure 3.1 (B). The following results were disclosed.

SP1

- Turnover of R 4 637 369
- Gross Profit (GP) of R 1 531 971 and GP percentage of 33.04%.
    - Dispensary GP on dispensary sales is 30.00%
    - Front shop GP on front shop sales is 48.95%
- Total Costs was R 1 522 159 (32.82% of total turnover)
- Net Profit before tax of R 9 812 (0.21% of total turnover)

FIGURE 3.1 (A): CONTROL DATA OF SP1 AND SP2

SMALL PHARMACY 1			SMALL PHARMACY 2		
Dispensary sales	3895476	84.00%	Dispensary sales	4,697,947	88.79%
Front shop sales	741893	16.00%	Front shop sales	593,141	11.21%
TOTAL SALES	4637369	100.00%	TOTAL SALES	5,291,088	100.00%
Dispensary cost of goods sold	2726658	58.80%	Dispensary cost of goods sold	3325596	62.85%
Front shop cost of goods sold	378740	8.17%	Front shop cost of goods sold	263163.99	4.97%
TOTAL COST OF GOODS SOLD	3105398	66.96%	TOTAL COST OF GOODS SOLD	3588760	67.83%
Dispensary gross profit	1168818	30.00%	Dispensary gross profit	1,372,351	29.21%
Front shop gross profit	363153	48.95%	Front shop gross profit	329,977	55.63%
TOTAL GROSS PROFIT	1531971	33.04%	TOTAL GROSS PROFIT	1,702,328	32.17%
Rental	183752	3.96%	Rental	136,687	2.58%
Leases	0	0.00%	Leases	0	0.00%
Insurance	13168	0.28%	Insurance	12,687	0.24%
FIXED COSTS	196920	4.25%	FIXED COSTS	149,374	2.82%
UIF & SDL	12571	0.27%	UIF & SDL	14,900	0.28%
Salaries & Wages	1091779	23.54%	Salaries & Wages	1,158,255	21.89%
Hair Salon	0	0.00%	Hair Salon	0	0.00%
Regional Services	5358	0.12%	Regional Services	5,602	0.11%
Vehicle Costs	7301	0.16%	Vehicle Costs	10,917	0.21%
Advertising	16815	0.36%	Advertising	8,497	0.16%
Stationery	11296	0.24%	Stationery	16,249	0.31%
Repairs & Maintenance	3335	0.07%	Repairs & Maintenance	293	0.01%
Refreshments	4371	0.09%	Refreshments	3,432	0.06%
Cleaning & Consumables	4063	0.09%	Cleaning & Consumables	3,738	0.07%
Community donation	5282	0.11%	Community donation	5,328	0.10%
CONTROLLABLE	1162171	25.06%	CONTROLLABLE	1,227,211	23.19%

FIGURE 3.1 (A): CONTROL DATA OF SP1 AND SP2 (continued)

Bank Charges	28783	0.62%	Bank Charges	28,533	0.54%
Light & Water	15304	0.33%	Light & Water	13,030	0.25%
Staff Training	0	0.00%	Staff training	0	0.00%
Postage	5415	0.12%	Postage	4,146	0.08%
Bad Debt W/O	2228	0.05%	Bad Debt W/O	3,020	0.06%
Bad Debt Recovery ***	-6219	-0.13%	Bad Debt Recovery ***	-2,148	-0.04%
Telephone	22610	0.49%	Telephone	16,651	0.31%
Packing Material	7944	0.17%	Packing Material	9,058	0.17%
Accounting Fee	9473	0.20%	Accounting Fee	9,467	0.18%
General	0	0.00%	General	0	0.00%
Collection fees	2230	0.05%	Collection fees	2,258	0.04%
Shortage/Overs	382	0.01%	Shortage/Overs	-1,543	-0.03%
Subscriptions	10265	0.22%	Subscriptions	8,828	0.17%
Computer Services	31092	0.67%	Computer Services	26,539	0.50%
Uniforms	12932	0.28%	Uniforms	14,313	0.27%
Security	12979	0.28%	Security	13,139	0.25%
Consulting Fees(Feosa)	4129	0.09%	Consulting Fees(Feosa)	3,859	0.07%
Legal Fees	3521	0.08%	Legal Fees	0	0.00%
VARIABLE COSTS	163068	3.52%	VARIABLE COSTS	149,150	2.82%
TOTAL COST (NETT)	1522159	32.82%	TOTAL COST (NETT)	1,525,735	28.84%
NETTO PROFIT BEFORE TAX	**9812**	0.21%	**NETTO PROFIT BEFORE TAX**	**176,593**	3.34%

SP2

- Turnover of R 5 291 088

- Gross Profit (GP) of R 1 702 328 and GP percentage of 32.17%.
    - Dispensary GP on dispensary sales is 29.21%
    - Front shop GP on front shop sales is 55.63%
- Total Costs was R 1 525 735 (28.84% of total turnover)
- Net Profit before tax of R 176 593 (3.34% of total turnover)

HP

- Turnover of R 14 390 967
- Gross Profit (GP) of R 4 721 292 and GP percentage of 32.81%.
    - Dispensary GP on dispensary sales is 29.48%
    - Front shop GP on front shop sales is 39.85%
- Total Cost was R 3 116 829 (21.66% of total turnover)
- Net Profit before tax of R 1 604 463 (11.15% of total turnover)

Total Group

- Turnover of R 24 319 424
- Gross Profit (GP) of R 7 955 591 and GP percentage of 32.71%.
    - Dispensary GP on dispensary sales is 29.52%
    - Front shop GP on front shop sales is 42.56%
- Total Cost was R 6 164 723 (25.35% of total turnover)
- Net Profit before tax of R 1 790 869 (7.36% of total turnover)

FIGURE 3.1 (B): CONTROL DATA OF HP1 AND TOTAL GROUP

HYPERPHARMACY			TOTAL GROUP		
Dispensary sales	9,773,877	67.92%	Dispensary sales	18,367,299	75.53%
Front shop sales	4,617,090	32.08%	Front shop sales	5,952,125	24.47%
TOTAL SALES	14,390,967	100.00%	TOTAL SALES	24,319,424	100.00%
Dispensary cost of goods sold	6892678.99	47.90%	Dispensary cost of goods sold	12,944,933	53.23%
Front shop cost of goods sold	2776996.01	19.30%	Front shop cost of goods sold	3,418,900	14.06%
TOTAL COST OF GOODS SOLD	9669675	67.19%	TOTAL COST OF GOODS SOLD	16,363,833	67.29%
Dispensary gross profit	2,881,198	29.48%	Dispensary gross profit	5,422,367	29.52%
Front shop gross profit	1,840,094	39.85%	Front shop gross profit	2,533,225	42.56%
TOTAL GROSS PROFIT	4,721,292	32.81%	TOTAL GROSS PROFIT	7,955,591	32.71%
Rental	286,174	1.99%	Rental	606,613	2.49%
Leases	0	0.00%	Leases	0	0.00%
Insurance	30,556	0.21%	Insurance	56,411	0.23%
FIXED COSTS	316,730	2.20%	FIXED COSTS	663,024	2.73%
UIF & SDL	26,408	0.18%	UIF & SDL	53,879	0.22%
Salaries & Wages	2,236,214	15.54%	Salaries & Wages	4,486,248	18.45%
Hair Salon	17,733	0.12%	Hair Salon	17,733	0.07%
Regional Services	15,500	0.11%	Regional Services	26,460	0.11%
Vehicle Costs	10,402	0.07%	Vehicle Costs	28,620	0.12%
Advertising	14,985	0.10%	Advertising	40,297	0.17%
Stationery	27,526	0.19%	Stationery	55,071	0.23%
Repairs & Maintenance	22,502	0.16%	Repairs & Maintenance	26,130	0.11%
Refreshments	7,782	0.05%	Refreshments	15,585	0.06%
Cleaning & Consumables	5,811	0.04%	Cleaning & Consumables	13,612	0.06%
Community donation	9,321	0.06%	Community donation	19,931	0.08%
CONTROLLABLE	2,394,184	16.64%	CONTROLLABLE	4,783,566	19.67%

FIGURE 3.1 (B): CONTROL DATA OF HP1 AND TOTAL GROUP (continued)

Bank Charges	102,601	0.71%	Bank Charges	159,917	0.66%
Light & Water	80,548	0.56%	Light & Water	108,882	0.45%
Staff Training	0	0.00%	Staff Training	0	0.00%
Postage	5,038	0.04%	Postage	14,599	0.06%
Bad Debt W/O	7,585	0.05%	Bad Debt W/O	12,833	0.05%
Bad Debt Recovery ***	-3,175	-0.02%	Bad Debt Recovery ***	-11,542	-0.05%
Telephone	40,793	0.28%	Telephone	80,054	0.33%
Packing Material	12,529	0.09%	Packing Material	29,531	0.12%
Accounting Fee	9,467	0.07%	Accounting Fee	28,407	0.12%
General	0	0.00%	General	0	0.00%
Collection fees	2,702	0.02%	Collection fees	7,190	0.03%
Shortage/Overs	-2,179	-0.02%	Shortage/Overs	-3,340	-0.01%
Subscriptions	15,368	0.11%	Subscriptions	34,461	0.14%
Computer Services	29,536	0.21%	Computer Services	87,167	0.36%
Uniforms	32,498	0.23%	Uniforms	59,743	0.25%
Security	70,250	0.49%	Security	96,368	0.40%
Consulting Fees(Feosa)	2,354	0.02%	Consulting Fees(Feosa)	10,342	0.04%
Legal Fees	0	0.00%	Legal Fees	3,521	0.01%
VARIABLE COST	405,915	2.82%	VARIABLE COST	718,133	2.95%
TOTAL COST (NETT)	3,116,829	21.66%	TOTAL COST (NETT)	6,164,723	25.35%
NETTO PROFIT BEFORE TAX	1,604,463	11.15%	NETTO PROFIT BEFORE TAX	1,790,868	7.36%

3.4.3 Experimental data

Concluded by the data in paragraph 3.4.2 (the actual income statement analysis) it was calculated that each pharmacy will run at an annual net loss (gross profit less expenses) if the price controls were to be implemented. These values for each pharmacy were subtracted from the total sales value in the income statements of the controls. An experimental income statement for each pharmacy was then drafted based on the implemented price controls regulations (SEP plus allowed mark up) which decreased every pharmacy's annual total sale. Figure 3.2 (A) is the experimental income statements for SP1 and SP2 for the year 2006 followed by the experimental income statements for 2006 of HP and the TOTAL GROUP in Figure 3.2 (B). The following results were obtained:

SP1

- Turnover of R 4 381 047
- Gross Profit (GP) of R 1 275 649 and GP percentage of 29.12%.
    - Dispensary GP on dispensary sales is 25.07%
    - Front shop GP on front shop sales is 48.95%
- Total Cost was R 1 522 159 (34.74% of total turnover)
- Net Loss before tax of - R 246 510 (-5.63% of total turnover)

SP2

- Turnover of R 5 080 133
- Gross Profit (GP) of R 1 491 373 and GP percentage of 29.36%.
    - Dispensary GP on dispensary sales is 25.88%
    - Front shop GP on front shop sales is 55.63%
- Total Cost was R 1 525 735 (30.03% of total turnover)
- Net Loss before tax of -R 34 362 (0.21% of total turnover)

HP

- Turnover of R 13 800 500
- Gross Profit (GP) of R 4 130 825 and GP percentage of 29.93%.
    - Dispensary GP on dispensary sales is 24.94%
    - Front shop GP on front shop sales is 39.85%
- Total Cost was R 3 116 829 (22.58% of total turnover)
- Net Profit before tax of R 1 013 996 (7.35% of total turnover)

Total Group

- Turnover of R 23 261 680
- Gross Profit (GP) of R 6 897 847 and GP percentage of 29.65%.
    - Dispensary GP on dispensary sales is 25.22.21%
    - Front shop GP on front shop sales is 42.56%
- Total Cost was R 6 164 723 (26.50% of total turnover)

- Net Profit before tax of R 733 124 (3.15% of total turnover)

FIGURE 3.2 (A): EXPERIMENTAL DATA OF SP1 AND SP2

SMALL PHARMACY 1			SMALL PHARMACY 2		
Dispensary sales	3639154	78.47%	Dispensary sales	4,486,991	84.80%
Front shop sales	741893	16.00%	Front shop sales	593,141	11.21%
TOTAL SALES	4381047	94.47%	TOTAL SALES	5,080,133	96.01%
Dispensary cost of goods sold	2726658	58.80%	Dispensary cost of goods sold	3325596	62.85%
Front shop cost of goods sold	378740	8.17%	Front shop cost of goods sold	263163.99	4.97%
TOTAL COST OF GOODS SOLD	3105398	66.96%	TOTAL COST OF GOODS SOLD	3588760	67.83%
Dispensary gross profit	912496	25.07%	Dispensary gross profit	1,161,395	25.88%
Front shop gross profit	363153	48.95%	Front shop gross profit	329,977	55.63%
TOTAL GROSS PROFIT	1275649	27.51%	TOTAL GROSS PROFIT	1,491,373	28.19%
Rental	183752	3.96%	Rental	136,687	2.58%
Leases	0	0.00%	Leases	0	0.00%
Insurance	13168	0.28%	Insurance	12,687	0.24%
FIXED COSTS	196920	4.25%	FIXED COSTS	149,374	2.82%
UIF & SDL	12571	0.27%	UIF & SDL	14,900	0.28%
Salaries & Wages	1091779	23.54%	Salaries & Wages	1,158,255	21.89%
Hair Salon	0	0.00%	Hair Salon	0	0.00%
Regional Services	5358	0.12%	Regional Services	5,602	0.11%
Vehicle Costs	7301	0.16%	Vehicle Costs	10,917	0.21%
Advertising	16815	0.36%	Advertising	8,497	0.16%
Stationery	11296	0.24%	Stationery	16,249	0.31%
Repairs & Maintenance	3335	0.07%	Repairs & Maintenance	293	0.01%
Refreshments	4371	0.09%	Refreshments	3,432	0.06%
Cleaning & Consumables	4063	0.09%	Cleaning & Consumables	3,738	0.07%
Community donation	5282	0.11%	Community donation	5,328	0.10%
CONTROLLABLE	1162171	25.06%	CONTROLLABLE	1,227,211	23.19%

FIGURE 3.2 (A): EXPERIMENTAL DATA OF SP1 AND SP2 (continued)

Bank Charges	28783	0.62%	Bank Charges	28,533	0.54%
Light & Water	15304	0.33%	Light & Water	13,030	0.25%
Staff Training	0	0.00%	Staff training	0	0.00%
Postage	5415	0.12%	Postage	4,146	0.08%
Bad Debt W/O	2228	0.05%	Bad Debt W/O	3,020	0.06%
Bad Debt Recovery ***	-6219	-0.13%	Bad Debt Recovery ***	-2,148	-0.04%
Telephone	22610	0.49%	Telephone	16,651	0.31%
Packing Material	7944	0.17%	Packing Material	9,058	0.17%
Accounting Fee	9473	0.20%	Accounting Fee	9,467	0.18%
General	0	0.00%	General	0	0.00%
Collection fees	2230	0.05%	Collection fees	2,258	0.04%
Shortage/Overs	382	0.01%	Shortage/Overs	-1,543	-0.03%
Subscriptions	10265	0.22%	Subscriptions	8,828	0.17%
Computer Services	31092	0.67%	Computer Services	26,539	0.50%
Uniforms	12932	0.28%	Uniforms	14,313	0.27%
Security	12979	0.28%	Security	13,139	0.25%
Consulting Fees(Feosa)	4129	0.09%	Consulting Fees(Feosa)	3,859	0.07%
Legal Fees	3521	0.08%	Legal Fees	0	0.00%
VARIABLE COSTS	163068	3.52%	VARIABLE COSTS	149,150	2.82%
TOTAL COST (NETT)	1522159	32.82%	TOTAL COST (NETT)	1,525,735	28.84%
NETTO PROFIT BEFORE TAX	-246510	-5.32%	NETTO PROFIT BEFORE TAX	-34,362	-0.65%

FIGURE 3.2 (B): EXPERIMENTAL DATA OF HP AND TOTAL GROUP

HYPERPHARMACY			TOTAL GROUP		
Dispensary sales	9,183,410	63.81%	Dispensary sales	17,309,555	71.18%
Front shop sales	4,617,090	32.08%	Front shop sales	5,952,125	24.47%
TOTAL SALES	13,800,500	95.90%	TOTAL SALES	23,261,679	95.65%
Dispensary cost of goods sold	6892678.99	47.90%	Dispensary cost of goods sold	12,944,933	53.23%
Front shop cost of goods sold	2776996.01	19.30%	Front shop cost of goods sold	3,418,900	14.06%
TOTAL COST OF GOODS SOLD	9669675	67.19%	TOTAL COST OF GOODS SOLD	16,363,833	67.29%
Dispensary gross profit	2,290,731	24.94%	Dispensary gross profit	4,364,622	25.22%
Front shop gross profit	1,840,094	39.85%	Front shop gross profit	2,533,225	42.56%
TOTAL GROSS PROFIT	4,130,825	28.70%	TOTAL GROSS PROFIT	6,897,846	28.36%
Rental	286,174	1.99%	Rental	606,613	2.49%
Leases	0	0.00%	Leases	0	0.00%
Insurance	30,556	0.21%	Insurance	56,411	0.23%
FIXED COSTS	316,730	2.20%	FIXED COSTS	663,024	2.73%

FIGURE 3.2 (B): EXPERIMENTAL DATA OF HP AND TOTAL GROUP (continued)

UIF & SDL	26,408	0.18%	UIF & SDL	53,879	0.22%
Salaries & Wages	2,236,214	15.54%	Salaries & Wages	4,486,248	18.45%
Hair Salon	17,733	0.12%	Hair Salon	17,733	0.07%
Regional Services	15,500	0.11%	Regional Services	26,460	0.11%
Vehicle Costs	10,402	0.07%	Vehicle Costs	28,620	0.12%
Advertising	14,985	0.10%	Advertising	40,297	0.17%
Stationery	27,526	0.19%	Stationery	55,071	0.23%
Repairs & Maintenance	22,502	0.16%	Repairs & Maintenance	26,130	0.11%
Refreshments	7,782	0.05%	Refreshments	15,585	0.06%
Cleaning & Consumables	5,811	0.04%	Cleaning & Consumables	13,612	0.06%
Community donation	9,321	0.06%	Community donation	19,931	0.08%
CONTROLLABLE	2,394,184	16.64%	CONTROLLABLE	4,783,566	19.67%
Bank Charges	102,601	0.71%	Bank Charges	159,917	0.66%
Light & Water	80,548	0.56%	Light & Water	108,882	0.45%
Staff Training	0	0.00%	Staff Training	0	0.00%
Postage	5,038	0.04%	Postage	14,599	0.06%
Bad Debt W/O	7,585	0.05%	Bad Debt W/O	12,833	0.05%
Bad Debt Recovery ***	-3,175	-0.02%	Bad Debt Recovery ***	-11,542	-0.05%
Telephone	40,793	0.28%	Telephone	80,054	0.33%
Packing Material	12,529	0.09%	Packing Material	29,531	0.12%
Accounting Fee	9,467	0.07%	Accounting Fee	28,407	0.12%
General	0	0.00%	General	0	0.00%
Collection fees	2,702	0.02%	Collection fees	7,190	0.03%
Shortage/Overs	-2,179	-0.02%	Shortage/Overs	-3,340	-0.01%
Subscriptions	15,368	0.11%	Subscriptions	34,461	0.14%
Computer Services	29,536	0.21%	Computer Services	87,167	0.36%
Uniforms	32,498	0.23%	Uniforms	59,743	0.25%
Security	70,250	0.49%	Security	96,368	0.40%
Consulting Fees(Feosa)	2,354	0.02%	Consulting Fees(Feosa)	10,342	0.04%
Legal Fees	0	0.00%	Legal Fees	3,521	0.01%
VARIABLE COST	405,915	2.82%	VARIABLE COST	718,133	2.95%
TOTAL COST (NETT)	3,116,829	21.66%	TOTAL COST (NETT)	6,164,723	25.35%
NETTO PROFIT BEFORE TAX	1,013,996	7.05%	NETTO PROFIT BEFORE TAX	733,123	3.01%

The control vs. experimental data overview of the pharmacies and group is given in tables 3.6. One notices that the price controls will once again have an enormous effect on the pharmacies' relevant financial factors, gross profit on sales dropt in each case, SP1 33% to 29%, SP2 32% to 29 and HP 29 to 25% . It is evident that SP1 and SP2 will struggle to survive if the price controls is implemented. When observing the three pharmacies individually one notices the two small pharmacies making net losses under price controls circumstances, whilst the hyper pharmacy is still making a net profit, although much lower, under

price controls circumstances. The reason for this can be found in the front shop gross profit contribution towards the total gross profit to cover expenses. The hyper pharmacy's front shop contribution in this regard shows a mark-up of 40%, although lower than 49% and 56% of the two smaller pharmacies, its portion of total sales is ± twice that of the two small pharmacies i.e. 12.7% control and 13.3% experimental as to 7.8% and 8.3% for SP1 and 6.2% and 6.5% for SP2.

Based on the above it may be a strategy option to go the hyper pharmacy way in order to remain sustainable (refer later discussion in par. 4.2.1.) The detrimental effect such a strategy would have on small rural communities, who do not warrant hyper pharmacies; and eventually would have to do without a pharmacy all being equal will need dire attention and planning. HP will experience the harrowing effects of price controls, but will still yield a profitable income. Before going in depth with the effects seen in Table 3.6, the Return on Equity (ROE) must first be calculated and explain some of the negative effects that SEP can cause in pharmacies. Better understanding of the PSF statement and concerns might come to the forefront.

TABLE 3.6 (A): SUMMARY DATA OF SP1 AND SP2 OBTAINED FROM THE FINANCIAL STATEMENTS

	SP1		SP2	
	CONTROL	EXPERIMENTAL	CONTROL	EXPERIMENTAL
TOTAL SALES	4637369	**4381047**	5291088	**5080133**
Dispensary Sales	3895476	**3639154**	4697947	**4486991**
Front shop Sales	741893	741893	593141	593141
Dispensary as % of total sales	84%	**83%**	89%	**88%**
Front shop as % of total sales	16%	17%	11%	12%
TOTAL COST OF GOODS	3105398	3105398	3588760	3588760
Dispensary cost of goods	2726658	2726658	3325596	3325596
Front shop cost of goods	378740	378740	263164	263164
Cost of Sales %	67%	**71%**	68%	**71%**
Dispensary Cost of Sales as % of total sales	70%	**75%**	71%	**74%**
Front shop Cost of Sales as % of total sales	51%	51%	44%	44%
GROSS PROFIT	1531971	**1275649**	1702328	**1491373**
Dispensary gross profit	1168818	**912496**	1372351	**1161395**
Front shop gross profit	363153	363153	329977	329977
Gross profit %	33%	**29%**	32%	**29%**
Dispensary gross profit %	30%	**25%**	29%	**26%**
Front shop gross profit %	49%	49%	56%	56%
TOTAL EXPENSES	1522159	1522159	1525735	1525735
Total expenses as % of total sales	33%	**35%**	29%	**30%**
NET PROFIT	9812	**-246510**	176593	**-34362**
NET PROFIT AS % OF TOTAL SALES	0%	**-6%**	3%	**-1%**
Total customers	36677	36677	36404	36404
Average sale	126	**119**	145	**140**

TABLE 3.6 (B): SUMMARY DATA FOR HP AND THE TOTAL GROUP OBTAINED FROM THE FINANCIAL STATEMENTS

	HP		TOTAL GROUP	
	CONTROL	TEST	CONTROL	TEST
TOTAL SALES	14390967	**13800500**	24319424	**23261679**
Dispensary Sales	9773877	**9183410**	18367299	**17309555**
Front shop Sales	4617090	4617090	5952125	5952125
Dispensary as % of total sales	68%	**67%**	76%	**74%**
Front shop as % of total sales	32%	**33%**	24%	**26%**
TOTAL COST OF GOODS	9669675	9669675	16363833	16363833
Dispensary cost of goods	6892679	6892679	12944933	12944933
Front shop cost of goods	2776996	2776996	3418900	3418900
Cost of Sales as % of total sales	67%	**70%**	67%	**70%**
Dispensary Cost of Sales as % of total sales	71%	**75%**	70%	**75%**
Front shop Cost of Sales as % of total sales	60%	60%	57%	57%
GROSS PROFIT	4721292	**4130825**	7955591	**6897846**
Dispensary gross profit	2881198	**2290731**	5422367	**4364622**
Front shop gross profit	1840094	1840094	2533225	2533225
Gross profit %	33%	**30%**	33%	**30%**
Dispensary gross profit %	29%	**25%**	30%	**25%**
Front shop gross profit %	40%	40%	43%	43%
TOTAL EXPENSES	3116829	3116829	6164723	6164723
Total expenses as % of total sales	22%	**23%**	25%	**27%**
NET PROFIT	1604463	**1013996**	1790868	**733123**
NET PROFIT AS % OF TOTAL SALES	11%	**7%**	7%	**3%**
Total customers	129474	129474	202555	202555
Average sale	111	**107**	120	**115**

3.5 ADDITIONAL CONCERNS

3.5.1 Return on equity (DuPont model)

The DuPont model helps to understand how various business strategies affect the profitability of a business. The model is as follows:

FIGURE 3.3(A): THE DUPONT MODEL

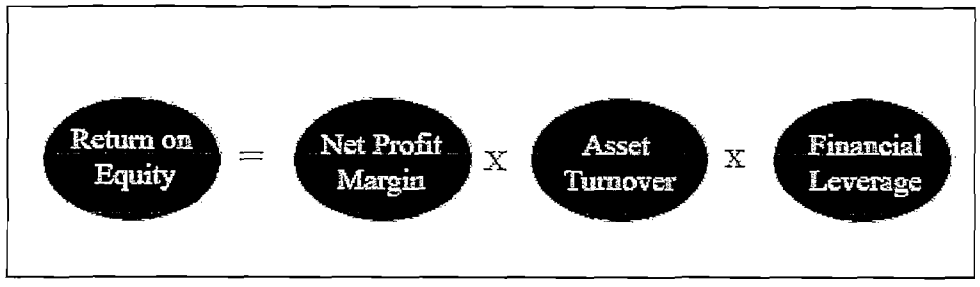


FIGURE 3.3(B): THE DUPONT FORMULA

$$\frac{\text{Net Income}}{\text{Average Stockholders Equity}} = \frac{\text{Net Income}}{\text{Net Sales}} \times \frac{\text{Net Sales}}{\text{Average Total Assets}} \times \frac{\text{Average Total Assets}}{\text{Average Stockholders Equity}}$$

FIGURE 3.3 (C): THE SIMPLIFIED DUPONT FORMULA

$$\text{Return on Equity} = \frac{\text{Nett Income}}{\text{Average Stockholders Equity}}$$

Figure 3.3 (A) illustrates the basic DuPont model with the formula following in Figure 3.3 (B). By doing some mathematical elimination the formula can be simplified to the formula in Figure 3.3 (C). Businesses can increase their rate of return by following different strategies. The following are the two fundamental strategies:

- **Product differentiation:** Under this strategy, companies offer products with unique benefits, such as high quality or unusual style of features. These unique benefits allow a company to charge higher prices. In

general, higher prices yield higher profit margins, which lead to higher returns on equity (as shown in the DuPont model). This can only be applied to front shop trade in circumstance of price controls on drugs. Pharmacies struggle to differentiate on products so they will have to rely on service to justify a higher price for products. Prices that are too high might cause a pharmacy to price itself out of the market.

- **Cost advantage:** Under this strategy, companies attempt to operate more efficiently than their competitors, permitting them to offer lower prices to attract customers. The efficient use of resources is captured in the asset turnover ratio, and as the DuPont model illustrates, higher asset turnover leads to higher return on investment. The cost advantages (for example purchases of bulk stock) have decreased significantly by implementation of SEP in the dispensary. In the past a pharmacy qualified for discount if they bought bulk stock, now if they buy one (1) item or a hundred (100) of the same item, the cost price is the same. The result is that this strategy can only be applied to front shop trade.

The total group had an average shareholder's equity of R 2,166 242 for the year 2006. The Net Income (before tax) for the group was R1 790 868 (control data). The experimental data (if price controls was implemented in 2006) delivered only R 733 123. This gives us the following ROE values:

- Control Data = 82.67%
- Experimental Data = 33.84%

At 33.84% ROE may seem to be a fair return if accepted that the group of three pharmacies is fairly representative of the industry. One should, however, rather focus on the dramatic drop in ROE and consider it then in terms of the risk involved in such an investment. The risk could however not be calculated because the researcher was not allowed insight in the companies balance

sheets. Secondly, since the balance sheets were not available, one couldn't determine if the assets were still carried at historic cost instead of re-valued values. This means that the ROE is not a true reflection since the shareholders equity is not correct. This may be seen as a limitation on this research. With the two fundamental strategies not really favourable strategies for pharmacies, it looks like the industry will probably struggle to gain investors' confidence with such a strong decrease in ROE.

3.5.2 Single exit price (SEP)

Pharmacists in South Africa had until the end of January 2007 to implement a new medicine pricing structure that will also allow drug manufacturers to increase their SEP by up to 5.2 percent for the first time since 2003. A notable fact of SEP is that it is only reconsidered every 3-5 years with no compensation for inflation annually (Mochicko, 2006).

FIGURE 3.4: BREAK EVEN CHART (CURRENT) FOR HP1

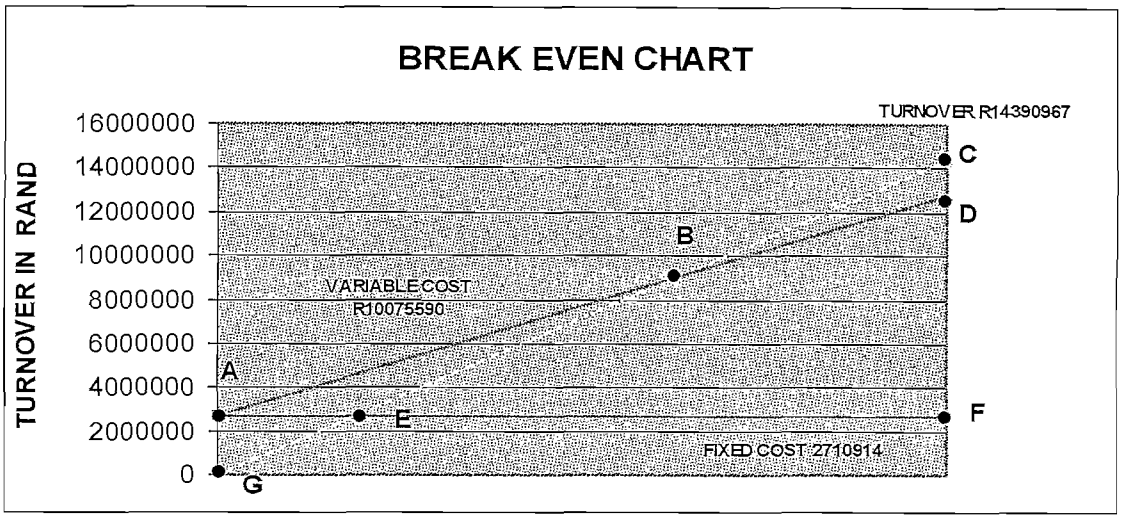
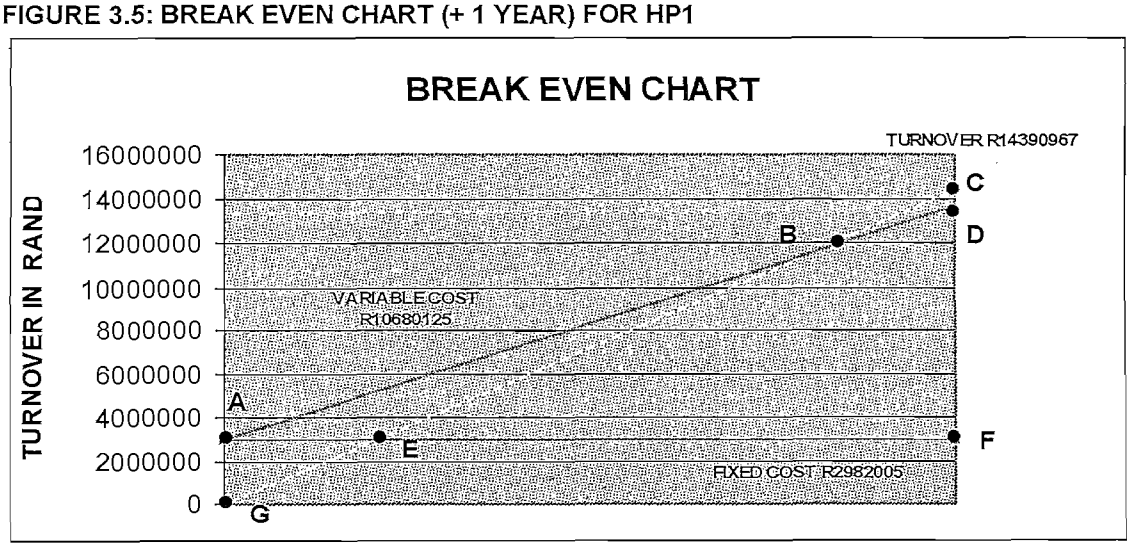


Figure 3.4 illustrates the break even chart for HP. The control data for HP (price controls not implemented) explains the effect of the DOH's implementation of SEP. The total turnover (total annual sales) is represented by the points GEC. Likewise, the variable cost (includes cost of goods) is represented by the points ABD. HP has a fixed cost of AEF. The break even point for HP is represented by point B. The result of this graph is that HP has a Net profit (tax exclusive) represented by the points BCD.

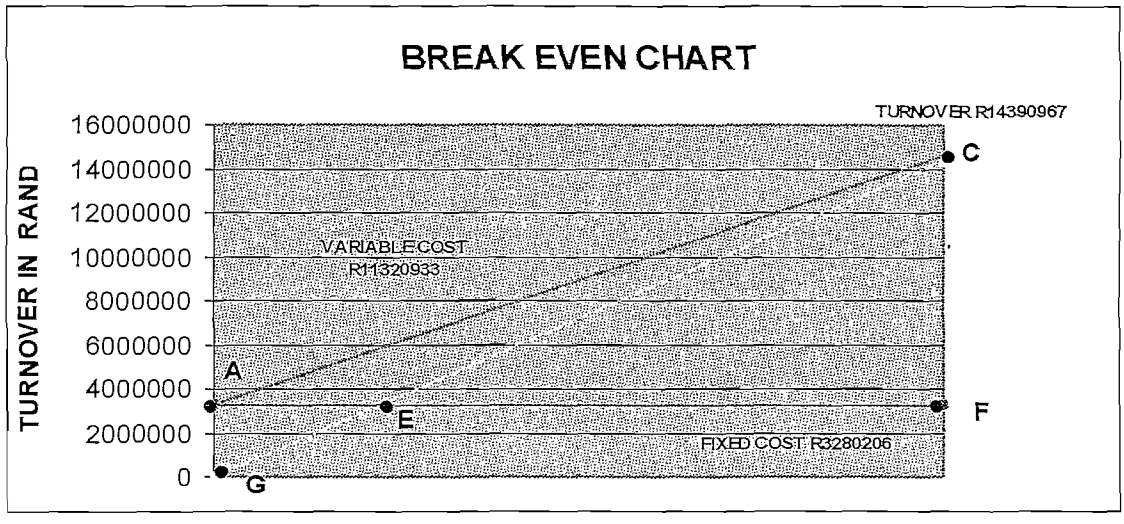
FIGURE 3.5: BREAK EVEN CHART (+ 1 YEAR) FOR HP1



In Figure 3.5 the estimated break even chart for HP is shown after a year of retail trading has passed. The chart was compiled by taking into account the following assumptions which are present in the retail pharmacy business:

- Variable cost rises each year with the average inflation rate of approximately 5%. The current Consumer Price Index (CPI) is 6.7% (SARB, 2007)
- Fixed expenses, for example salaries and rent rise each year with approximately 10% (average obtained from shareholders).
- SEP is only reviewed every 3-5 years and will therefore remain constant for this time period as explained in par. 3.5.2.
- Mark-up on scheduled drugs will remain constant and there is no growth in the front shop (front shop was made constant for smaller pharmacies in rural areas where growth is minimal).
- In small towns and communities the total amount of customers stagnates when it is not a striving town or community. The customer base will stay relatively constant.
- SEP, mark-up and customer base are constant; therefore turnover will be constant.

FIGURE 3.6: BREAK EVEN CHART (+ 2 YEARS) FOR HP1



The graphs in Figure 3.5 represent the same financial indicators as in Figure 3.4. It is clear that the Net Profit (BCD) is smaller after only one year of trading.

The break-even chart for HP after two years is illustrated in Figure 3.6. The graph in Figure 3.6 once again represents the same financial indicators as in Figure 3.4. The fixed and variable costs were once again increased and the turnover was kept constant. It is noticeable that the Net Profit BCD is not noticeable anymore. It is only visible with a point C which indicates that HP is on break-even point after an annual retail period. This reiterates the problem of decreasing profits as a result of sales income on drugs staying the same, because SEP remaining constant and on the other hand increasing costs due to inflation.

If price controls is implemented, HP would be legally restrained to increase the mark-up on dispensary drugs. A strategic move by HP could be to increase the mark-up on front shops products, but this could be lethal if they price themselves out of the market. The SEP analysis was done with the control data. If the experimental (price controls implemented) data was used, it would have been

much worse for HP because of a gross profit percentage of 30% instead of 33% (Table 3.6).

The second argument is that it is not a very lucrative proposition for a business man to keep its doors open if they were to trade for a period of twelve months to reach break even point. Return on investment will be non-existent. There is too much risk involved for a pharmacist and its shareholders in a pharmacy business to comply with a 0% return on investment. Pharmacies are nowadays also a target for theft, and prone to expired stock which results in thousands of Rand per year in write-offs. One of the greatest risks is that they have their patients' lives in their hands and as they are also just human, mistakes are made, sometimes for the worst of the patient. One lethal mistake with a prescription or a wrong medicine can cost a pharmacist all the money that was invested in studying to become a pharmacist, for he may be prohibited to practice as a pharmacist again.

Small pharmacies in South Africa will not survive if price controls is implemented in South Africa. The following chapter will touch on some of the dramatic effects that a shortage of pharmacies and price controls itself will have on our country.

3.6 CONCLUSION

The following conclusions can be derived from Table 3.5 (if price controls were to be implemented):

- All the pharmacies are following the same trend and will have a loss in net profit. The loss in net profit per item for each pharmacy differed due to the different prescribing methods of the doctors in the pharmacy area, but was in the range of R4-R7 per item.

- All the pharmacies will have a decrease in GP with the total group's GP percentage decreasing from 33% to 30%. The GP of the front shop will stay unchanged while the GP of the dispensary will be hit the hardest. The total group's GP percentage for the dispensary decreased by 5% from 30% to 25%.
- All the pharmacies will therefore have a decrease in net profits (before tax). Both SP1 and SP2 will have a net loss for the year while HP will continue to show a net profit. This net profit has decreased though, and the total group's net profit will decrease from 7% to 3%.
- Although HP will have a net profit, it is by no means sustainable as shown in Figure 3.6. According to the break-even analysis, HP will most likely survive for another 2-3 years if they are not able to grow their front shop.
- HP is the only pharmacy that will survive. HP has a very low total cost percentage of 22% compared to the average of approximately 30% of SP1 and SP2. HP cost advantages are partly due to economies of scale since it is a hyper pharmacy.
- HP has a higher front shop sales contribution (32%) compared to SP1 (16%) and SP2 (11%). Since price controls only affects the dispensary, the effect will be less percentage wise on the sales of HP compared to SP1 and SP2.
- The DuPont model shows that the ROE will decrease from 83% to 33%. Although 33% is a very high return, it will probably decrease even more if the SEP-effect is taken into account. The industry will become less lucrative for investors to invest their money in.

The DOH (Department of Health) claims that the proposed price controls are necessary to keep the prices of medicine affordable for all South Africans. They also claim that pharmacists will still earn a reasonable income with the implementation of the price control on drugs. My conclusion is that the DOH hasn't done efficient research on the topic of price controls.

The PSF said that with price controls as much as 75% of pharmacies were at a significant risk of failure if they relied on the dispensing fee for their survival. They also claimed that the impact would hit pharmacies in rural areas the hardest. The claim that pharmacists will still earn a reasonable income is, in my opinion, speculation by the DOH with no proof attached to it. The fact that the analysis has been kept away from the public gives the researcher the feeling that there might be a hidden agenda behind the implementation of the price controls (Mail and Guardian, 2006).

"You might have cheap medicine but is that healthcare? This basically focuses on access to medication - if you destroy that, the cost is going to escalate not for the guys in the cities but smaller communities which would have to drive to bigger centres to get medicine" (Finance24 , 2006). While corporate pharmacies in affluent areas are most likely to survive, their survival is by no means guaranteed. Smaller independent pharmacies are at higher risk, with pharmacies in rural and other underserved areas, where they are needed most, at greatest risk (Finance24, 2006).

The fact is that Hyper pharmacies will survive but their profitable sustainability is not at all guaranteed. Pharmacists will have no other option but to acquire other pharmacies to try and create an economy of scale to cut down on costs and to grow their market share. The real problem for South Africa's health sector has got to be the smaller pharmacies. What can the pharmacies in rural areas really do to survive? There is no large customer base or market growth in smaller towns, and it will inevitably lead to stagnation of turnover. These pharmacies obviously won't qualify for the advantage of economy of scale.

Now that we have established that the price controls is not viable for small pharmacies, we can continue to see what the effect will be on the communities of South Africa.

CHAPTER 4
CONCLUSION

4.1 INTRODUCTION

For many centuries governments around the world have tried to impose price restrictions in order to attain a lower price structure for the benefit of the population as a whole. These endeavours failed (refer to par. 2.3.2). The price controls on medicines will have exactly the same impact and in the long run will harm patients and increase the suffering of some of the most vulnerable and needy South Africans.

The existence of price and profit controls around the globe may appear to legitimise to some extent the drug pricing proposals in South Africa. However, comparing drug prices in different countries are highly complex and claims that drug prices are lower in countries that control prices are misleading and often inaccurate. In addition to the inconsistencies in comparing drug prices, a number of unintended consequences arise when governments interfere in the market for medicine. All such relevant issues should inform the decisions of the medicine pricing committee.

4.2 CONSEQUENCES OF THE PROPOSED PRICE CONTROL

Based on the international experience of drug price regulations and the structure of the local industry, distributors and pharmacies, a wide range of unintended negative consequences can be expected from the proposed price control based upon the literature study and the comparative case studies in chapters 2 and 3 respectively.

4.2.1 Reduced drug access

Drug price regulations could force many pharmacies into bankruptcy and ensure that the distribution of drugs to rural and remote areas will be financially impracticable. Unless innovative income earnings ventures are created, regulations could reduce the income stream and profit margins for pharmacies, wholesalers and distributors to such an extent that it will become impossible to carry a wide range of medicines. Many of these companies could be forced to diversify their businesses by selling cosmetics and other products and reduce their involvement in healthcare products. The lack of profitability in the sale and distribution of medicine could also reduce the incentive for pharmacists to invest in training and skills development, which in turn will harm many patients who seek advice directly from pharmacists.

In rural areas or townships that are not well served with large high volume retailers and pharmacies, poor consumers and patients have no choice but to purchase medicine (and indeed all manner of other goods) from small scale retailers that may have high margins due to their low volume of trade. Yet consumers are acting rationally when they purchase goods from these retailers because they apparently choose to pay a higher price for convenience to buy locally and not to travel long distances. (Louw *et al.,* 2006:12). Their alternative could be to travel long distances (thereby incurring travel costs) to access medicine from the high volume, low mark-up retailers in urban centres. The regulations could do considerable harm to consumers by undermining their choices as they will most probably drive the convenient (but low volume, high mark-up) retailers out of the over-the-counter medicine business.

4.2.2 Shortages of drugs, parallel trade and theft

The drug price regulations distort the normal market clearing process and effectively increase demand for medicine without providing the economic incentives that serve to match demand with supply (refer to par. 2.3.4). As demand outstrips supply the resulting shortages in drugs will reduce the ability of healthcare professionals to provide high quality care to their patients and will therefore reduce patient welfare. Apart from these shortages, the regulations provide incentives for parallel trade in medicine (selling low priced South African medicine to countries that have higher prices) and will encourage theft of medicine. All of these will greatly reduce patient welfare, most particularly for poor patients that will not be able to pay a premium to access the scarce medicines.

4.2.3 Regulations will become increasingly complex and onerous

Once in place, the drug price regulations are likely to become ever more complex and onerous to comply with. This happened during the Nixon administration: price controls began with 3.5 pages of regulations, but before long they grew to over 1,500 pages. Regulation cannot emulate all the various factors affecting supply and demand that are normally captured in a free market pricing system. This leads to ever more complex and onerous regulations as the regulators try to carry out the functions of the normal market mechanism. In addition to this, the fact that a new bureaucracy will have significant powers over the commercial decisions of private companies will generate a great deal of rent-seeking behaviour from vested interests. This generally reduces choice for consumers and harms patient welfare (refer to par. 2.4).

4.2.4 Reduced price competition

As explained above, it is not necessarily true that those countries that do not have drug price regulations have higher prices. While drug prices in the US are higher for some drugs, they are lower for others and the fact that there are a limited number of price regulations means that there is very active competition among generic drug producers (Louw *et al.,* 2006). The fact remains that competition is a far more effective way of protecting consumers than price controls. The price regulations may end up reducing price competition among manufacturers and in the long run harming the consumer by fixing prices above what would otherwise have been achieved in an open competitive market.

4.3 OBJECTIVES

The objectives of the study were twofold, i.e.:

1. to ascertain whether the price controls forced upon the healthcare industry by the DOH of South Africa is viable in small retail pharmacies; and
2. to determine what the impact will be on small retail pharmacies and their communities.

This study concluded that the new price controls forced upon the healthcare industry by the DOH would not be viable in small retail pharmacies. This study concluded that bigger hyper pharmacies' survival would also not be guaranteed. Although profitable, then at a much lower level, makes them much more vulnerable in economic downswings. It is suggested that further studies with enough data to statistically represent all pharmacies in South Africa is conducted to confirm the assumptions made in this study. The impact could have devastating effects on small pharmacies in rural areas where business growth possibilities are minimal. The effect on their communities could not really be

established, because actual information on them could not be attained and researched, the real effect will only be realised when community pharmacists are not there to serve anymore.

4.4 RESEARCH RECOMMENDATIONS

- This study was done with data from three pharmacies in South Africa. A further in-depth study should be conducted with data from a representative sample of pharmacies to statistically represent pharmacies in South Africa.
- This study was done by using only the income statements provided by the three pharmacies. Data from balance sheets of pharmacies should be analysed to provide some insight into some other important financial ratios of a pharmacy.
- The ***effect of price controls on the enrolment of pharmacy students at tertiary institutions*** could be analysed to see if there is any need to be concerned about future shortages of skilled pharmacist in South Africa.
- The effect that the price controls battle over the past few years has had on the number of pharmacists leaving the country should be analysed. A study on ***the effect of price controls on skilled labour in South Africa*** should be conducted.
- Communities will only realise the effect on pharmacy closures when they are not able to serve them anymore. Studies in rural areas without pharmacies should be done to better understand the ***effects that shortages in community pharmacies will have on communities in South Africa***.
- Research into ***the effect that price controls has on manufacturers (manufacturing and registration) of drugs in South Africa*** should be conducted. Manufacturers have greater incentives to register their medicine and comply with the increasingly onerous regulatory

requirements in countries where they have greater freedom to price their products without bureaucratic intervention. The healthcare outcomes could be severe and might reduce patient welfare as well as the ability of physicians to care for their patients if newer drugs aren't registered.

- Research into ***the effect that price controls has on research and development in South Africa*** should be conducted. South Africa has traditionally been a favoured destination for drug companies to conduct research and development because of the sound scientific base, good infrastructure and range of different population groups with widely different social statuses in which to run trials. The drug price regulations could reduce any incentive to conduct trials and invest in scientific infrastructure and knowledge as the ability to make appropriate returns on the investment is reduced.
- Research into ***the effect that price controls will have on entrepreneurs in South Africa*** should be conducted. Price control seems to favour the large incumbent industries that have sunk costs and economies of scale. Prices tend to be set at levels that keep high volume, low mark-up businesses operating, albeit at lower profits. Price controls therefore protects these industries by making it virtually impossible for any other new competitors that would have higher margins, lower volumes and no economies of scale from entering the market.

4.5 CONCLUSION

The message is very clear in the pharmacy industry. **Go big or go home!** Since price controls doesn't affect the front shop products, it is of dire necessity that pharmacies try to grow their front shop contribution to sales. This will make them less vulnerable against the new price controls regulation if it is to be implemented. Growth in sales is the single most important future factor for all pharmacies. When growth in the big, city pharmacies starts to stagnate, they will most probably go into a price war or try to acquire other pharmacies to expand.

Unfortunately, the only real suggestion for smaller pharmacies is to try and expand their front shop. If this is not possible, they should try to merge with neighbouring pharmacies and work together. This would be much better than going into a price war that will only decrease profit margins for all and further aggravate the situation.

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