



# Price Setting Behaviour In The South African Retail Sector

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## ABSTRACT

The pricing practices that firms that follow are important from a microeconomic as well as a macroeconomic perspective, indicating the nature and level of competition. These practices also prove to affect the effectiveness of monetary policy. This study engineered a survey approach to better understand the pricing behaviour of firms in the South African retail sector.

The survey approach to understanding pricing setting has grown in popularity in recent times, allowing for deeper insights into the mindsets of actual pricing professionals than information offered by micro data studies. Most previous studies have focused on developed countries, while this study deals with a sector of high industry concentration in a developing country with a relatively unstable foreign exchange rate.

The results of the study demonstrate that South African retail firms compete primarily with their pricing and quality, and that there is evidence of barometric price leadership. The dominant framework used by firms to set their prices is mark-up pricing.

Both price reviews and price changes in South African retail firms were found to be time dependent, and the causes of price changes were asymmetrical depending on the direction of the change. The main driver of price increases was an increase in input costs, while the main driver of price decreases was a reduction in domestic competitor prices.

Prices within the South African retail sector were found to be sticky, with the strongest specific cause of firms delaying price adjustments being the maintenance of threshold prices. When considering the reasons for stickiness more broadly as themes, customer relationships are the strongest driver of stickiness, followed by the avoidance of coordination failure.

## DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Date: 07/11/2012

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# CHAPTER 1 - INTRODUCTION TO RESEARCH PROBLEM

## 1.1 Introduction

The pricing practices followed by firms are important to understand from both a microeconomic as well as macroeconomic perspective. From a microeconomic point of view, pricing behaviour is indicative of how firms compete with each other as well as their need to respond to the environment within which they compete. For individual firms the pricing decision is a key one, affecting customers' perceived value and profitability as well as playing a part in brand identity. "The process of choosing and setting the 'right' price is, however, costly in many ways. The time and effort spent by senior staff to set prices and the cost of communicating the price changes to clients are non-trivial." (Amirault, Kwan, & Wilkinson, 2006, p. 1).

From a macroeconomic perspective, when monetary policy is implemented, certain industries' price adjustment responses are lagged. The misalignment between policy and pricing adjustments affect the real economy in the short term. "The nature of price setting has important implications for a range of issues in macroeconomics, including the welfare consequences of business cycles, the behaviour of real exchange rates, and optimal monetary policy." (Nakamura & Steinsson, 2008, p. 1415). In recent years there has been increased focus on competition law and the eradication of anticompetitive behaviour (Hartzenberg, n.d.). A deeper understanding of pricing behaviour would provide an indication of anticompetitive behaviour at a sector level.

## 1.2 Research Scope

The scope of the study was limited to retail companies in South Africa, where retail sales are considered to be the sale of products directly to individual consumers. Since this is a study in microeconomic behaviour, only profit maximising firms were included, thus excluding public sector firms, non-profit organisations and all firms selling into price-regulated markets.

### 1.3 Research Motivation

There have been a number of national studies into price-setting practices, examples are the United Kingdom (UK) (Parker & Greenslade, 2012), Canada (Amirault et al., 2006), and the Euro zone (Fabiani, Druant, Hernando, Kwopil, Landau, Loupias, Martins, Matha, Sabbatini, Stahl, Stokman, 2006), but thus far the body of knowledge represents developed nations. Studies are typically done on a national basis. This is because price stickiness in any context is defined by the relationship between prices, productivity growth, and openness, with South Africa's mix allowing for high mark-ups, which decrease inflation and in turn affect monetary policy (Klein, 2011).

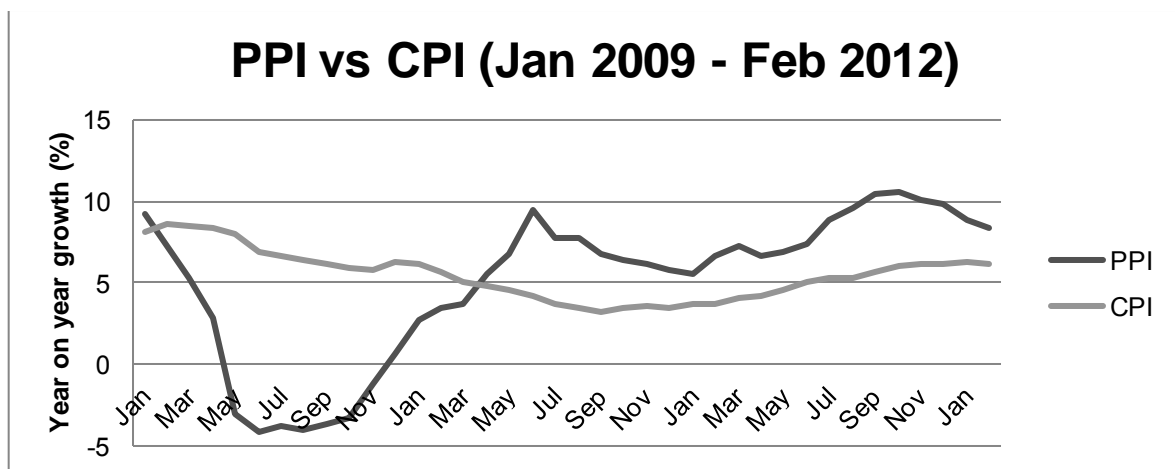
Since the global financial crisis, there has been increased scrutiny of monetary policy by the general public, and the United Kingdom has followed on their pre-recession study with a post-recession one. The aim of the proposed research is to review pricing behaviour in the South African retail sector, focussing on the rationale and behaviour relating to price reviews and adjustments. The study was focussed on how and why prices are set in the retail sector, but with the goal of being incorporated into a larger study across sectors.

The “wholesale, retail, motor trade and accomodation” sector contributed 13.04% to the total South African economy in 2011, adding value of R386.43 ZAR billion (Statistics South Africa, 2011). Of that amount, sales of products directly to consumers accounted for 47.2%, calculated by removing wholesale (Statistics South Africa, 2011) and accomodation (Statistics South Africa, 2011) from the total sector. This is an understated figure, given the large amounts of sales by wholesalers directly to consumers in South Africa, but it indicates the importance of consumer sales to the economy.

An indication of consumer price stickiness can be ascertained by comparing how a market's Consumer Price Index (CPI) behaves in relation to its Producer Price Index (PPI). Both PPI and CPI are indices that measure the change of a price set of goods, with CPI relating to consumer sales and PPI applying to production (Schneider, 2009). An important prerequisite is that PPI relates to locally produced goods only, with the majority being sold to businesses and the minority being sold directly to consumers, while CPI is all goods sold directly to consumers, including imported goods.

The majority of goods that form PPI can be viewed as input costs of the goods that make up CPI. This relationship means that in a market with flexible consumer prices, CPI would track PPI, whereas in a market with sticky consumer prices, the changes to PPI would not always be reflected in CPI. Figure 1 below shows the relationship between year on year CPI growth and year on year PPI growth. Figure 1 displays that PPI has had a wider range of 14.7% versus that of CPI, at 5.4%. PPI is also visibly more volatile than CPI, indicating that consumer prices are sticky, as volatile input costs stand in contradiction to stable prices.

**Figure 1 Year on year growth of PPI versus CPI between January 2009 and February 2012**



Data Source: Statistics South Africa, 2012 (P0141, P0142)

The indications from Figure 1 above suggest that there is price stickiness in the retail sector in South Africa. The implications of the effects of price stickiness on the effectiveness of monetary policy decisions, coupled with the benefits for competition, present a strong case for completing a study in pricing behaviour within South Africa's retail sector. This study was undertaken in order to prove that South Africa's retail sector has sticky prices and to understand the underlying reasons for the stickiness, with attention paid to price reviews as well as price changes.

## 1.4 Research Problem

The aim of this research is to identify what the dominant approaches to pricing are, how often they are reviewed, and how often they are changed. Crucial to the approaches of pricing includes the ability to understand whether there are differences in the regularity of reviews and changes, why there are such differences, and what the underlying reasons for those disparities are. The approach of this research is not to use econometric modelling of micro data, but rather to understand the behaviour of price decision makers within the sector. “The advantage of surveys over econometric techniques is that by asking firms directly we can obtain qualitative information, such as the factors taken into consideration by firms when reviewing the prices charged for their products.” (Greenslade & Parker, 2010, p. 3).

The specific objectives of this study can be listed as the following:

- Establish the dominant pricing framework within the South African retail sector.
- Determine how often retail companies review their prices and why they have chosen to do so regularly or irregularly.
- Determine how often retail companies change their prices, what the relationships between price changes and price reviews are, and what the dominant determinants of price changes are.
- Determine if retail prices are sticky.

## CHAPTER 2 - LITERATURE REVIEW

### 2.1 Introduction

In order to meet the research objectives defined in the concluding paragraph of chapter 1, specific theories need to be understood, relating to the various aspects of retail pricing behaviour. In order to ascertain the dominant pricing frameworks within the market, an exhaustive list of pricing methodologies is required, particularly in the case where a firm follows one implicitly, whereby they follow a particular strategy logically but not due to a theoretical understanding.

The competitive landscape in which firms operate needs to be understood with respect to its effect on a firm's pricing behaviour and decisions. Specifically, theories of price leadership and price discrimination will be discussed, as both of these concepts relate to pricing practices defined to some degree by the level and type of competition in an industry.

The nature and causes of price changes will be discussed, with price increases and price decreases dealt with separately in case of differences between the importance of specific reasons for price changes. Due to the nature of the South African retail sector, and its reliance on imports, the importance of the exchange rate will be discussed specifically.

In order to gauge stickiness, the theoretical framework for price stickiness and its effects on monetary policy need to be understood. In particular, price reviews and the costs of carrying them out, as well as price changes and their associated costs need to be understood.

A further complication dealt with by price-setters is the fact that they have to decide on how to trigger price reviews; whether they should be at regular intervals or triggered by specific events. In order to perform this aspect of the study, time versus state dependencies need to be understood.

**Figure 2: Visual representation of Literature Review Structure**

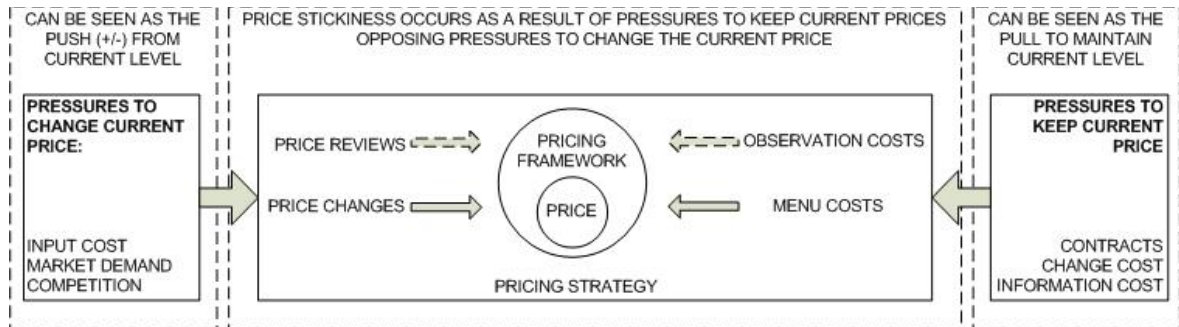


Figure 2 above depicts the logical links between the elements of the literature review and the balancing between the pressure to adjust prices and the costs of doing so. The literature review will broadly follow the structure evident in Figure 2, from the inside outwards, commencing with the frameworks or mechanisms for defining prices, followed by the pricing strategies firms use to compete with each other. The next topic is price stickiness, the outcome of the interplay between the pressures to keep prices constant and the pressures to change current prices. This is followed by detailed discussions around price reviews and price changes and their respective costs.

## 2.2 Pricing Frameworks

Choosing a methodology for setting product prices is a vital function within firms, and there is often a pricing department that controls the policies that govern prices and the systems and processes that facilitate them. Kotler and Keller (2009) list five methodologies for setting prices:

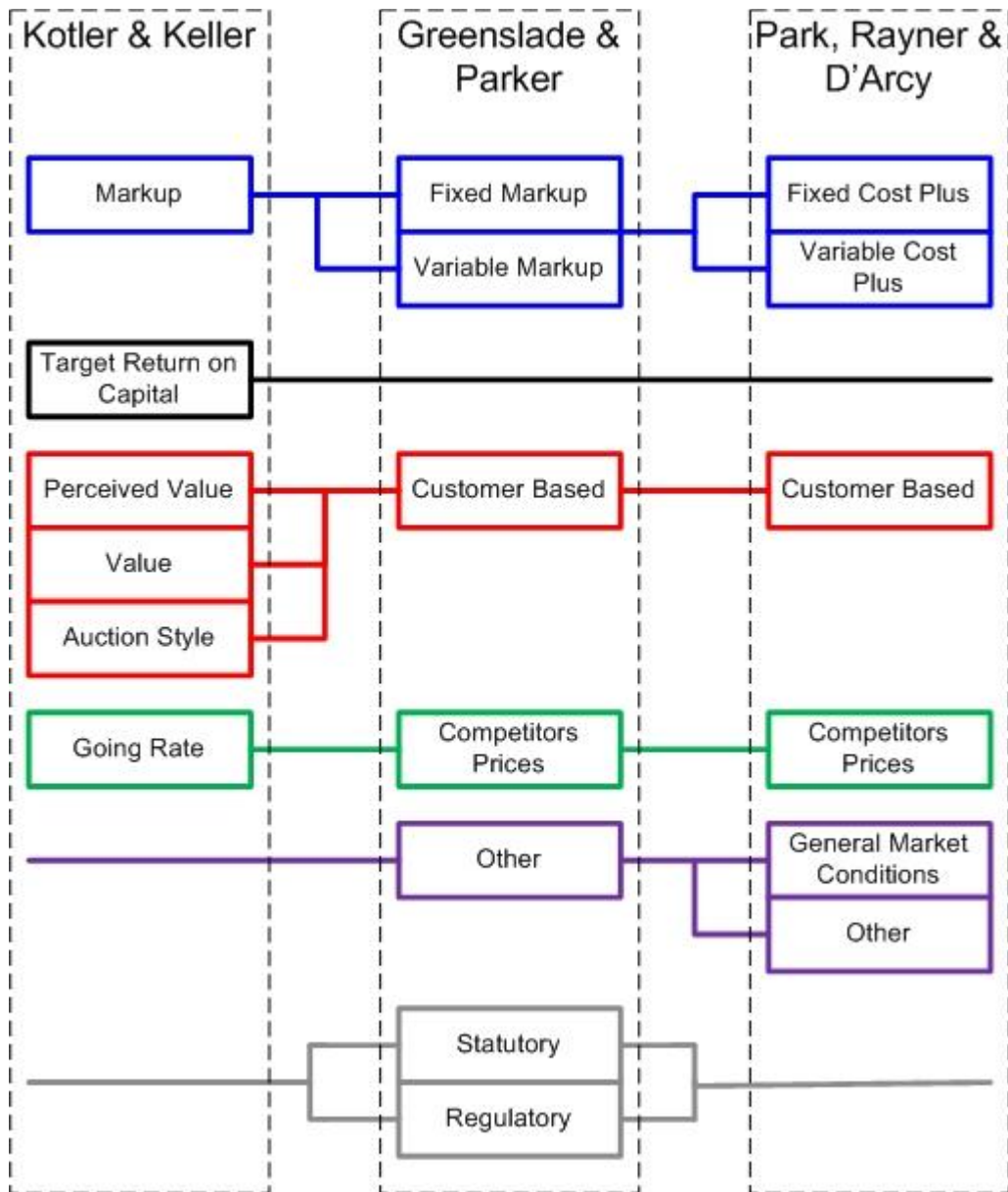
- Mark-up pricing, whereby a price is simply the unit cost of production of a good with a standard mark-up margin added to it. The formula for a mark-up price is:  $\text{Price} = \text{Unit Cost} / (1 - \text{desired return on sales})$
- Target-return pricing is a method where the firm sets a price that yields its target return on investment of capital. The formula for a target-price is:  $\text{Price} = \text{Unit Cost} + (\text{Desired Return} * \text{Invested Capital}) / \text{Unit Sales}$

- Perceived Value Pricing entails a firm understanding the value that its current and potential customers perceive in its products, and price at that level. Fundamental to the success of this strategy is to demonstrate superior value.
- Value Pricing is similar to perceived value pricing with the crucial difference that firms have to demonstrate tangible value to customers at low prices.
- Going-rate Pricing is where firms set their prices predominantly in relation to competitor pricing, maintaining either lower, higher, or matched prices. Industry concentration plays a large role, with oligopolies matching prices; while in more concentrated industries, market power and value propositions drive lower or higher prices.
- Auction-Type Pricing has grown in popularity, particularly in online retailing, and can be implemented as ascending bid, descending bid and sealed bid.

The aforementioned methodologies bear similarities to the determinants of prices provided in a survey for the UK (Greenslade & Parker, 2010), as well as those used in an Australian survey (Park, Rayner, & D'arcy, 2010). In order to establish an exhaustive list of price determinants, the three sets of methodologies are compared in Figure 3 below:



**Figure 3: Visual representation of pricing frameworks**



The dotted vertical bands in Figure 3 represent the collections of methodologies by author; while the colour coded horizontal links represent common concepts, such that each set of horizontal links represents a unique type of methodology. As is visually apparent from Figure 2, the UK study is the most exhaustive list, with only a “target return on capital” methodology missing completely. As such, an exhaustive list of pricing frameworks would be:

- Fixed mark-up on unit cost
- Variable mark-up on unit cost
- Targeted return on capital
- Customer-based pricing
- Competitor-based pricing
- Prices set at statutory level
- Prices defined by regulatory agencies
- Other mechanisms outside of the common practices

The selection of a pricing methodology depends on the nature of the particular market a firm is in. Mark-up pricing remains the popular choice due to costs being easier to quantify than demand (Kotler & Keller, 2009). This is consistent with the results from the euro zone and Romanian studies, where 56% and 43% of goods are priced on a mark-up basis respectively (Fabiani, et al., 2006 & Copaciu, Neagu & Braun-Erdei, 2010)

## **2.3 Competition and Price Strategies**

The level of competition that firms deal with in their industry is related to the number of competitors, the intensity of that competition and the firms' relative market power. These can all have an effect on how firms set their prices.

### **2.3.1 *Price Discrimination***

Price Discrimination is the term for the practice whereby firms charge consumers different prices for the same goods and services in order to maximise overall profits (Baye, 2010). There are three types of price discrimination:

- First Degree, where firms charge each customer a unique prices, to extract full consumer surplus.
- Second Degree, where firms offer declining prices for increasing quantities.
- Third Degree, where firms charge groups of customers different prices for the same good or service.

In the cases of the UK as well as Italian studies, first and third degree price discrimination were treated as the same, with the options being:

- Firms sell the same product at different prices to the same or different consumers, including on a unique case-by-case basis.
- Firms sell the same product at different quantities based on quantities required.
- Firms sell the same product at uniform prices.

The retail market, as defined for the current study includes only those goods sold directly to individual consumers, making third degree price discrimination irrelevant. This allows for consistency with the UK and Italian studies. In both the UK and Italian studies, the retail sector had the highest proportion of uniform prices.

### **2.3.2 Price Leadership**

Another prominent strategic decision for firms when defining their pricing practices is that of price leadership, and whether to adopt a leading or following role. “Under price leadership, one firm in an industry (the price leader) announces its price changes before all other firms, which then match the leadership.” (Besanko, Dranove, Shanley, & Schaefer, 2010, p. 286) Price leadership is typically more prevalent in concentrated markets, and particularly in oligopolistic markets.

Mouraviev and Rey (2011) listed three types of price leadership, namely dominant firm, barometric and collusive. As explained by Scherer (1970) in Deneckere and Kovenock (1992), dominant price leadership occurs when an industry consists of a dominant firm (traditionally greater than 50% of market output) and smaller fringe firms that cannot individually affect prices through their output. In this type of industry the dominant firm, by nature of being the only firm with the power to set price, becomes the price leader (Deneckere & Kovenock, 1992).

Barometric price leadership occurs when firms in particular industries are more well-informed than others in that they have better quality or better access to, market information. Barometric price leadership differs in that it is not necessarily the dominant firm that acts as the leader, but rather the most well-informed. Another key distinction is

that the leader does not stay static, as different firms can act as the leader for different periods. As stated by Markham (1951) in Cooper (1996) “The barometric firm possesses no power to coerce the rest of the industry into accepting its price... it simply passes along information to the ‘Big Three’ or ‘Big Four’.” (Cooper, 1996, p. 301). Firms often adopt a price follower strategy to avoid the costs of information acquisition.

The final form of price leadership is collusive price leadership, often used as a facilitating practice for collusion, whereas dominant and barometric leadership are competitive practices. The reasons for collusive leadership are typically to allow for market coordination, or due to asymmetric information among firms (Mouraviev & Rey, 2011).

South Africa is a country with high industry concentration in many sectors of the economy. Botha and Van Schalkwyk (2006) in Terblanche (2009) provided an example of the food retail sector in South Africa, where the four largest supermarket retailers accounted for 94% of the market by turnover in 2006 (Terblanche, 2009). This is consistent with clothing and footwear retail segments, where the International Trade Centre stated that the two largest retailers in the segment accounted for 44.5% of the market in 2009 (Whitehouse, 2010). With evidence of high market concentration in the retail sector, it is likely that many firms will be engaged in either price leadership or price following.

## **2.4 Price Stickiness**

Price stickiness is a long understood concept, and given the fact that it can affect macroeconomic policy, it has been included in many models. Historically, most studies into price stickiness revolved around building econometric models. These models had low predictive success, due to their assumptions of perfect rational behaviour (Shiller, Gordon, & Grossman, 1991).

Price Stickiness refers to a situation whereby prices in an economy do not change when microeconomic events or macroeconomic shocks occur. The general term for items that constrain price adjustment, and cause price stickiness, is nominal rigidities, also known as price rigidities (Parker & Greenslade, 2012). Nominal rigidities occur when firms avoid changing their prices because of the significance of the costs associated with doing so (Alvarez, Lippi, & Paciello, 2011). These costs can be grouped into menu costs and

information costs, otherwise known as observation costs, which affect price reviews and price changes respectively.

When considering previous price setting studies, there were commonalities regarding the most popular nominal rigidities. The UK study found explicit contracts to be the largest nominal rigidity affecting price changes, the Canadian study found the stability of variable costs to be the largest factor, while the largest factor in Romania and the Euro zone was implicit contracts (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010; Fabiani et al., 2006).

## **2.5 Price Stickiness and Monetary Policy**

Pricing behaviour is the primary interface where microeconomic actions directly affect macroeconomic policy and performance. “Price rigidities are usually seen as a major determinant of the response of production and inflation to nominal shocks trouncing the economy. Therefore, identifying the type of price rigidities which characterize the economy emerges as an issue of paramount importance.” (Dias, Marques, & Silva, 2005, p. 2).

An example of where this microeconomic interface to macroeconomic policy is important is inflation persistence. This refers to a situation whereby the rate of inflation sluggishly returns to its long-run mean. The benefit of understanding persistence is that a measure of persistence provides an indication of the size of the impact of a macroeconomic shock on future inflation as well as the length of time the impact is felt for (Rangasamy, 2009).

## **2.6 Price Reviews**

The typical price setting process for firms is a two stage procedure, comprised of a review stage and a change stage. This section is related to the price review stage and the considerations that are required when doing so. This is followed by a discussion of the information set used by firms to review their prices.

### **2.6.1            *Price reviews and Observation Costs***

Price reviews are the events when firms decide to validate their current prices. There are often costs involved in gathering the information required to review the price, these are known as observation or information costs. The benefits of reviewing the price are weighed against the observation costs of doing so. The firm usually decides on the optimal timing for when to review costly information on the adequacy of their price. When reviewing the price, the firm decides whether or not to change their price, subject to menu costs (Alvarez et al., 2011).

The benefits of constant price reviews and changes are straightforward, in terms of adjusting for market externalities and margin protection. The costs involved in doing so provide a trade-off that firms attempt to balance, and so provide the disincentive to changes. These disincentives can be considered the root cause of stickiness.

### **2.6.2            *Information Set for Price Reviews***

A second deliberation for firms when considering a policy for reviewing (and consequently setting) prices is the set of information to do so. Firms often have the choice of using a general rule of thumb, historical, current or forecasted information, or a combination of these practices.

Fabiani, et al. (2006) stated that New Keynesian Phillips Curve (NKPC) models, which are purely forward looking in nature, while theoretically successful, do not generate results inclusive of the sluggishness of prices that is evident in empirical studies. Smets (2003) ran an NKPC model replacing purely forward-looking components with a mixture of forward and backward-looking components. Copaciu et al (2010) stated that this form of hybrid NKPC model has become widely adopted in forecasting models, and the practice is supported by their results, which show that 78% of surveyed firms in Romania use a combination of backward-looking and forward-looking components in reviewing their prices.

## 2.7 Price changes and factors that affect them

Price changes represent the second stage of the price setting process, and would logically follow from the results of a price review. The firm ascertains the appropriateness of its current prices with respect to the information set in its review process.

### 2.7.1 *Price changes and menu costs*

When a firm reviews its prices, the main objective is to decide whether to change the current price or maintain it until the next review. Menu costs are the costs that a firm would incur when changing its current price to a new one (Alvarez et al., 2011). Menu costs provide disincentive for firms to change their prices, an example where menu costs apply are contracts.

There are costs involved in changing contracts with customers; both explicit, legally binding contracts, as well as implicit contracts, which are tacit agreements between buyer and seller. Menu costs of changing explicit contracts can be costly due to potential legal exposure, while changes to both explicit and implicit have the potential to affect customer relationships. In many cases, it could be beneficial to accept the diseconomy of not changing prices to avoid the risk of potentially higher downsides.

Menu costs can be divided into three distinct categories or components (Celic, Muharremoglu, & Savin, 2009):

- Fixed components of menu cost, which would include, for example, the advertising cost of new prices.
- Inventory-specific components, which would include the cost of replacing price tags and labels on existing inventory items.
- Components dependant on the magnitude of the change. These would include cognitive and coordinative management costs.

## 2.7.2 *Reasons for Price Changes*

The trade-off that firms balance with respect to price changes is the disincentive of menu costs versus the incentives of increasing or decreasing prices. Table 1 below lists the major factors causing price changes as found by Greenslade and Parker (2010). These factors are listed in descending order of shared response on highest importance.

**Table 1: Factors causing price changes**

<b>FACTORS CAUSING PRICE DECREASES</b>	<b>FACTORS CAUSING PRICE INCREASES</b>
Actual decline in demand	Increase in the prices of fuel, raw materials or input/components
Actual price reduction by one or more of the domestic rivals	Increase in cost of labour
Decrease in the prices of fuel, raw materials or input/components	Actual rise in demand
Significant reduction in market share	Increase in costs arising out of regulation
Expected decline in demand	Actual price increase by one or more of the domestic rivals
Expected price reduction by one or more of the domestic rivals	Expected rise in demand
Decrease in cost of labour	Increase in financing costs
Actual price reduction by one or more of the international competitors	Expected price increase by one or more of the domestic rivals
Decrease in costs arising out of regulation	Significant increase in market share
Decrease in financing costs	Actual price increase by one or more of the international competitors
Expected price reduction by one or more the international competitors	Expected price increase by one or more of the international competitors

Data Source: Greenslade & Parker, 2010 (p. 22-23)

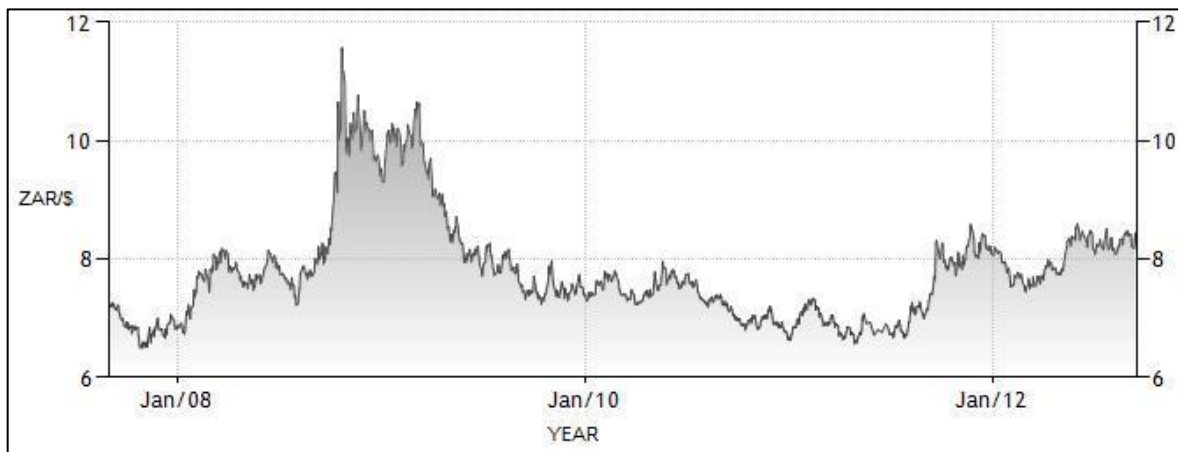
The most popular factor causing price increases in Romania and the UK was an increase in input costs, with the second most popular factor being an increase in labour costs (Copaciu et al., 2010; Greenslade & Parker, 2010). The most popular factor causing price increases in the Canadian study was found to be an increase in prices by domestic competitors (Amirault et al., 2006).



The largest factor in price decreases in the UK was an actual decline in demand, followed by actual price decreases by domestic rivals (Greenslade & Parker, 2010). The Romanian and Canadian studies both had a price decrease by domestic rivals as the largest factor causing price decreases, for Romania this was a joint highest factor, while Canada found a decrease in input cost to be the second largest factor (Copaciu et al., 2010; Amirault et al., 2006).

In addition to the factors listed above, special attention needs to be paid to the exchange rate. South African retailers import substantially in certain industries, for example clothing and footwear, with imports reaching 1.1 billion dollars in 2009 (Whitehouse, 2010). Reliance on imports within an industry is not unusual in other countries; what makes it notable in South Africa is the unstable nature of the country's currency. Figure 4 below confirms the unstable exchange rate expressed as the number of Rands needed to purchase 1 US Dollar.

**Figure 4: South African Exchange Rate (ZAR to 1 USD)**



Data Source: Trading Economics, 2012

## 2.8 Time versus State Dependant Rules

There are two established forms of rules that govern price reviews and changes. The first are time dependent rules, where a firm routinely reviews its prices according to a specific schedule. Examples of routine price reviews include those undertaken daily, weekly or

monthly. The second form of rule is State dependent. State dependent price reviews and changes occur when a firm reviews or changes its price in response to discrete events that negatively affect the validity of the current prices (Wolman, 2008).

The price-changing or price-reviewing decision in time-dependent models is exogenous, in that prices change irrespective of the state of the economy; their occurrences are defined deterministically. The consequence of time-dependent models is that the effects of macroeconomic shocks are not related to the state of the economy. Conversely, decisions in state-dependent models are endogenous. Principally, firms take decisions constantly, and change based on the comparison between menu costs and the benefit of the change. The likelihood of a change is directly related to the state of the economy, and the effect of macroeconomic shocks is related directly to the state of the economy (Baumgartner, 2005).

Firms do not have to choose between time and state-dependent rules, and are able to use a mix of both to trigger pricing reviews (Dias, Marques, & Silva, 2007). The choice of approach is affected by the degree of competition, exposure to market externalities, stability and firm strategy.

When considering previous studies, the Canadian study was found to be time dependent (66% of the sample), the Romanian study state dependent (43% of the sample), while the dominant mechanism in the UK (43%) and Euro zone (46%) studies was a combination of the time and state dependency (Amirault et al., 2006; Copaciu et al., 2010; Greenslade & Parker, 2010; Fabiani, et al., 2006).

## CHAPTER 3 - RESEARCH QUESTIONS

### 3.1 Introduction

The purpose of this study is to gain insight into the behaviour followed by firms in setting and reviewing their prices. The study also allows for benchmarking between South Africa and other countries that have conducted studies into their price-setting behaviour. The study focusses on ascertaining what the dominant methodology is that firms use to set their prices, whether firms' prices are sticky or not, whether they follow a state or time dependant strategy for their reviews and changes, and what the causes of price stickiness are with respect to both increases and decreases.

### 3.2 Research Proposition 1: Retail firms predominantly follow a mark-up pricing strategy

Kotler and Keller (2009) stated that mark-up pricing remains the most popular pricing framework, and propose this as the most popular framework because costs are easier to quantify than demand. This is consistent with the non-sector-specific Euro Zone study, where 56% of goods are priced on a mark-up basis (Fabiani, et al., 2006). Most retailers, particularly in the food, clothing and consumables sectors sell large quantities of heterogeneous goods, making demand estimation, and hence value pricing, more difficult.

### 3.3 Research Proposition 2: Retail price reviews and price changes are time-dependent

Retail firms, particularly those focussing on groceries and clothing sell a large variety of products, sourced both locally and via imports. Due to the relative complexity of their supply chains, it can be expected that retail firms would adopt a time-dependent strategy of price reviews. This is supported by the results of the UK study, where it was shown that 42.5% of firms in the trade sector review their prices at regular intervals, 39.6% review their prices at regular intervals and in response to specific events, and only 17.9% review their prices solely in response to specific events (Greenslade & Parker, 2010).

### **3.4 Research Proposition 3: There is a delay in retail price changes in response to microeconomic and macroeconomic shocks**

The difference in ranges between PPI and CPI (14.7% versus 5.4%) stated in section 1.3, evident in Figure 1, implies a stickiness of prices to end consumers, as many PPI items would be input to the firms selling items contributing to CPI. This trend is coupled with the relatively high menu costs in retail due to the relatively low levels of buyer concentration in the retail sector (Amirault et al., 2006). In particular, the high fixed components of advertising a price change, and high inventory components due to price being displayed on individual items would lead to cost changes that would be outweighed by the menu costs of increasing prices to compensate.

### **3.5 Research Proposition 4: The largest cause of retail price increases is an increase in input cost, and a decrease in competitor prices is the largest cause of retail price decreases**

Fabiani, et al. (2006) stated that under general conditions, in imperfectly competitive markets, mark-up pricing is the most commonly chosen pricing framework by firms. The high industry concentration in the retail sector in South Africa, described in section 2.3 would yield imperfect competition, implying that firms likely adopt a mark-up framework for setting prices.

A second result of high industry concentration is an oligopoly market structure, which yields price leadership practices. Irrespective of whether the sector practices dominant market, collusive or barometric price leadership, since there is only one leader, the majority of firms would change their prices in response to a change by the single leader.

An increase in input costs was the most common cause for price increases, while a decrease in competitor price was the most common cause for price decreases in the UK (Parker & Greenslade, 2012). This was consistent with the results from the recent Euro Zone study (Fabiani, et al., 2006).

### **3.6 Conclusion**

The testing of the propositions listed above has provided insight into how firms in the retail sector in South Africa set their prices, and whether they review and set them on a regular or irregular basis. This study has also ascertained whether or not the prices of firms of the respondents are sticky or flexible, and what the drivers of their price increases and decreases are.

The study provides a basis for benchmarking of the South African retail sector versus similar pricing behaviour studies from other regions and sectors.

# CHAPTER 4 - RESEARCH METHODOLOGY

## 4.1 Introduction

Chapter 4 is a detailed description of the research methodology followed in order to conduct the study. The chapter commences with a description of the research method used, followed by a description of the population and the unit of analysis. This is followed by sections detailing the sampling method and size, as well as the approach to data gathering and the research instrument itself. The chapter concludes with the methodology for analysing the data, and finally, discusses the limitations of the study.

## 4.2 Research Method

### 4.2.1 *Research Rationale*

The purpose of this study is to understand the behaviour followed by firms in setting, reviewing and changing their prices, the frequencies of doing so, the factors that influence them, as well as the impact of menu and observation costs. Greenslade and Parker (2012) emphasised the two popular approaches for improving the understanding of price rigidity and price setting, the choice being either analysing large datasets of actual prices, or conducting surveys on people that make pricing decisions to ascertain how they make their decisions and the factors that influence them.

The use of surveys to study price-setting behaviour and price stickiness was first established by Blinder (1991), who explained the concept using the billiards analogy below.

“A good pool player makes excellent use of the laws of physics without understanding them, and certainly without being able to articulate them. For this reason, many economists doubt that much can be learned by asking ‘economic players’ about how they play the game. But I believe that more pointed questions, posed in plain English, can elicit useful answers. For example, if you ask a skilled billiards player whether he bases his shots on

the principle that the angle of incidence equals the angle of reflection, he will probably look at you quizzically. But, if you take him to the table and, pointing to the proper angles, ask: ‘Do you try to make this angle the same as that angle?’ I imagine he would respond in the affirmative” (Blinder, 1991, p. 91)

This approach is advocated by Amirault et al. (2006) who stated that the survey approach has gained in popularity with researchers due to its recognition of relative stickiness, which econometric models have failed to meet, and the fact that new theories explaining stickiness have appeared before older ones have been rejected. Amirault et al. (2006) further explained that “There is also growing recognition that price stickiness can be best understood by examining pricing behaviour at the micro level, where pricing decisions are actually made.” (Amirault et al., p. 3).

The research method undertaken was a descriptive study, implemented through a quantitatively designed survey. Saunders and Lewis (2012) defined descriptive studies as research designed specifically to accurately represent persons, situations or events, and appropriate for asking measurable, quantifiable data. “Unlike exploratory research, descriptive studies are conducted after the researcher has gained a firm grasp of the situation being studied. This understanding, which may have been developed in part from exploratory research, directs the study toward specific issues.” (Zikmund, Babin, Carr, & Griffin, 2009, p. 55).

In the case of price-setting behaviour, there have been various survey studies that have followed similar methods in testing common theories regarding price-setting. The structure of the survey was based on the survey used by the UK study, and was developed iteratively, in that it was adapted to incorporate significant inputs from a pre-testing phase (Greenslade & Parker, 2010).

#### **4.2.2            *Research Process***

The study was conducted by completing standard surveys, through mixed modes, of individuals within firms that were responsible for pricing decisions. Zikmund et al. (2009) defined mixed-mode surveys as surveys that adopt the use of multiple survey methods. In

the case of the current study, telephone and email were used to discern the eligibility and availability of potential respondents to complete the survey, leveraging the advantages of the various modes (Zikmund et al., 2009). Depending on respondent preference or availability, telephone, web-based and face to face interviews were all available as methods for completion.

The surveys were completed predominantly as web surveys, and some were prepared as structured face to face and telephone interviews. Saunders and Lewis (2012) defined a structured interview as “a method of data collection using a questionnaire in which each person is asked the same set of questions in the same order by an interviewer who records the responses” (Saunders & Lewis, 2012, p. 141). All questions were standardised irrespective of the format used by respondents, with web-based surveys being by far the most popular method to complete the survey.

Table 2 below represents a comparison of physical interviews, telephone interviews and web-based surveys. It is evident from Table 2 that web-based surveys are superior in terms of speed, geographic and question flexibility, versatility, anonymity and cost. The major drawback of web-based surveys is that the possibility of respondent misunderstanding is high. This drawback necessitates a strong focus on ensuring validity and a lack of ambiguity in question design. In order to ensure this rigour, pre-testing was performed on the survey.



**Table 2: Comparison of Physical Interviews, Telephone and Web-based surveys**

Item	Physical Interview	Telephone Interview	Web-based Survey
Speed of Data Collection	Moderate to Fast	Very Fast	Instantaneous
Geographic Flexibility	Limited to Moderate	High	High (Worldwide)
Respondent Cooperation	Excellent	Good	Varies
Versatility of Questioning	Quite Versatile	Moderate	Extremely Versatile
Length	Long	Moderate	Moderate
Item non-response rate	Low	Medium	Can assure none
Possibility for respondent misunderstanding	Low	Medium	High
Degree of interviewer influence on answers	High	Moderate	None
Anonymity of respondent	Low	Moderate	High (Choice)
Ease of callback or follow-up	Difficult	Easy	Easy (With email address)
Cost	Highest	Low to Moderate	Low

Data Source: Adapted from Zikmund et al. (2009)

The advantages of well-designed web-based surveys are expanded upon by Cobanoglu, Warde and Moreo (2001) who stated that they yield a higher response rate and lower cost when compared to fax or mail surveys; they also allow for automated coding of data. This second advantage was utilised in this study, as all physical and telephone responses to the interviews were still entered into the web-based survey by the researcher in order to facilitate improved speed of data collection and analysis.

### 4.3 Population and Unit of Analysis

The population of the study was retail businesses in South Africa, who are profit maximising firms and are not in price-regulated markets. Given that one aim of the study is to be incorporated into a national study across all sectors, service firms were not included in the population, to avoid potential overlap. All firms included in the study were required to fulfil the following requirements:

- Public or private companies, close corporations, partnerships and sole proprietorships, but excluding non-profit organisations
- Sell products directly to individual consumers

- Do not operate in legislated markets

The unit of analysis for the study was the individual staff member in each firm that makes or oversees the pricing decisions. Where a firm has multiple product lines, with independent price-setters, the separate price-setters could be included as long as the decisions and frameworks were independent of each other. An example of this would be a downstream oil company that would sell massive amounts of diesel directly to consumers as well as convenience retailing goods. However, the frameworks and decisions are completely independent of each other, and made by individuals in different departments.

#### **4.4 Sampling method and size**

The unit of analysis is particularly specific in the case of this study, the price-setting individual is a particular role within a firm, and specifically only retail firms were considered. Taking into account the specific nature of the unit of analysis, as well as the high industry concentration in South Africa, non-probabilistic sampling was followed. Zikmund et al. (2009) defined non-probabilistic sampling as “A sampling technique in which units of the sample are selected on the basis of personal judgement or convenience; the probability of any particular member of the population being chosen is unknown.” (Zikmund, Babin, Carr, & Griffin, 2009, p. 395).

The specific type of non-probabilistic sampling that was employed was purposive, or judgement sampling. Saunders and Lewis (2012) defined purposive sampling as “a type of non-probability sampling in which the researcher’s judgement is used to select the sample members based on a range of possible reasons and premises.” (Saunders & Lewis, 2012, p. 138). This type of sampling was performed in order to ensure that the members of the sample all met the particularly specific qualifying criteria. The sample size for this study was intended to be 50 respondents.

The intended sample size of 50 respondents was agreed upon as a realistic number of successful surveys. This is in line with previous notable price-setting surveys conducted in other regions, summarised below.

**Table 3: Comparison of sample sizes among pricing studies**

Criteria	UK	Canada	Romania	SA Retail Target	SA Retail Actual
Surveys requested	2331	N/A	1901	169	150
Surveys successfully completed	693	170	377	50	30
Hit rate (%)	30%	N/A	20%	30%	20%
Time (months)	3	10	3	2	2

Data Source: Extracted from (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010)

When considering previous price setting studies, there are certain commonalities between that had to be taken into account when designing this study:

- Almost all previous studies were sponsored by, or performed by, reserve banks, with the use of substantial resources.
- The lowest reported hit rate was 20%, with many firms not reporting a hit rate, or implying that all firms selected performed the survey.
- The lengths of the survey phase were between 1 and 10 months, with shorter phases having large amounts of researchers.

Taking into account the resources and timelines of previous studies; it was felt that 50 respondents would be a reasonable target for this study. This is a small sample size when compared to previous studies, but pragmatism had to be applied, given the constraints of a single researcher, a short survey period and a highly concentrated sector. When comparing various survey modes, Dillman, Phelps, Tortora, Swift, Kohrell, Berck and Messer (2008) reported a response rate for web-based surveys of 13% over a single phase, and a response rate of 44.9% when web-based and telephone surveys were combined in two phases. With that in mind, the target for the current study was set with an assumed hit rate of 30%, consistent with the UK study (Greenslade & Parker, 2010).

The aim was to get more than 50 price-setters from retail firms in South Africa to participate in the survey, ideally pricing managers, finance managers or general management who are involved in setting prices. The researcher did not manage to gain

the specified target of 50 successful surveys, but reached a final total of 30. The 30 successful surveys were delivered from a total of 150 requests. Some common reasons for the low response rate were:

- Firms showed high degrees of paranoia and reluctance regarding sharing pricing information, despite the fact that no actual prices were requested. All requests for assistance had a standard proviso stating the confidentiality and anonymity of the surveys, but the nature of the survey was still problematic for firms involved in the study.
- This challenge was exacerbated by the high industry concentration in retail in South Africa, as many holding companies refused to take part, which would further result in multiple companies within groups being excluded.
- The time period of the study was a limiting factor, as often the person making the pricing decision would not be available during the period. In certain cases, the potential respondent was interested in completing the survey, but would only be able to do so after the survey period was over.

#### **4.5 Data Gathering and Research Instrument**

The questionnaires used by Greenslade and Parker (2010) for the UK study, and Amirault et al. (2006) for the Canada study formed a solid base as questions that were used for this study, given that both studies are recent, and have strong coverage of relevant pricing literature. Using common questions from previous studies in other regions also allowed for the benchmarking of South African retail pricing practices against those captured in previous studies. This is of particular interest, as most previous studies have been conducted in developed countries, as opposed to a developing country such as South Africa.

The questionnaire designed for this study was semi-structured in nature. It consisted predominantly of closed questions, with particular topics having open-ended questions. This was so that questions with a finite number of possible responses could have their responses categorised with answers selected from options on a Likert scale basis, while

the open ended questions allowed the uncovering of any reasons for pricing behaviour in South Africa not covered by pricing literature.

The questionnaire consisted of 3 sections:

- Section A dealt with the specifics of the firm in terms of size, number of employees, pricing decision levels, cost structures and contact information. This section consisted of short, non-complex selection-style questions that focussed on general facts about the firm and its competition. Section A did not require an understanding of complex concepts, consistent with Zikmund et al. (2009) that stated that to maximise response rates, initial questions in a survey should not be complex.
- Section B commenced with questions regarding price reviews and price changes followed by the factors that price setters take into consideration when setting their prices. Include within this section was a portion regarding the information set that firms use in their price-setting practices. Section B concluded with the effect of the exchange rate fluctuations on the firm's price-setting.
- Section C dealt specifically with the elements of price stickiness. The first concept dealt with was sticky information, followed by competitive pressures, input costs, explicit and implicit contracts and weighting questions regarding the factors that cause firms to delay increases and decreases of prices.

Once the questionnaire was fully designed, a pre-testing phase was carried out, with all pretesting interviews conducted physically. This is in line with Amirault et al. (2006), who stated that physical interviews yield better results than virtual ones, due to the interviewer being able to observe the interviewee, and limit ambiguity. Zikmund, et al. (2009) focussed on three options for pretesting questionnaires:

- Review a questionnaire with the person that requested the research
- Review a questionnaire with other research professionals
- Review a questionnaire or complete a trial run on a group of respondents

The pre-testing of the first draft of the questionnaire was a combination of all three techniques. The questionnaire was pre-tested with the supervisor of the research study, and requestor of this study, as well as 2 senior lecturers and research experts at the

Gordon Institute of Business Science, and the head of research and two economists from the Reserve Bank of South Africa. The feedback was as follows:

- The questionnaire was lengthy.
- There was ambiguity with respect to certain principles in the questionnaire.
- Certain economic theories were not clearly defined at the start of the questionnaire.
- There were recommendations to group questions more coherently into themes.

The feedback was taken into account to update and edit the survey and the final version that was submitted to respondents within the research sample can be found in appendix A.

## **4.6 Data Analysis**

Once the questionnaires were collected, the resultant data was a mix of numerical data, and categorical data, examples would be percentage increases in price and regularity of reviews respectively. Consistent with the examples, the categorical data was predominantly for ranked data showing the relative importance of items, whereas the descriptive data represented frequencies. This data was used to generate descriptive statistics, in line with the Royal Bank of Australia study; these descriptive statistics would be used to generate frequency graphs and tables depicting relative dominance with respect to approaches and frameworks (Park et al., 2010). The numerical data consisted of both discrete as well as continuous data.

The analysis of the data was done using basic descriptive statistics as discussed above. In terms of inferential statistics, one statistical test was performed to show the relationship between price reviews and price changes. The findings from the descriptive and inferential statistics were supported by qualitative data, where firms provided additional input to their quantitative answers.

## **4.7 Research Limitations**

- The sample size of 30 that was achieved for this study can be seen as a limitation to the study. The time constraint of having only one researcher for this study made

it impossible to achieve a higher sample size. In order to fully understand the ability of monetary policy shocks to affect short-run prices, a study comprising all sectors should be completed for comparison purposes, but the size of the population would be impractical for an individual to work through alone.

- Ideally, it is required that there would be a previous study of the South African retail sector to compare results with in order to evaluate the effect of the recent financial recession, but this does not exist.
- Given the competitive value of pricing information as well as the increased focus on anticompetitive behaviour, many firms were uncomfortable discussing their pricing behaviour, and many potential respondents declined to take part due to this reason specifically.

## CHAPTER 5 - RESEARCH RESULTS

### 5.1 Introduction

Chapter 5 contains the results from the surveys to the questionnaires that were disseminated in order to gain information for the current study. This was discussed in Chapter 4 above, the survey itself can be found in appendix A. The results shown in Chapter 5 represent the crucial results required to answer the research propositions from Chapter 3. The full set of results can be found in appendix B.

The results below represent a sample of 30 surveys completed by pricing decision makers in retail businesses in South Africa. Due to the sample size, predominantly descriptive statistics will be shown. This introduction is followed by a section detailing the sample used for the study, followed by the descriptive statistics which make up the majority of the results; including a test involving inferential statistics, and finally a conclusion to Chapter 5.

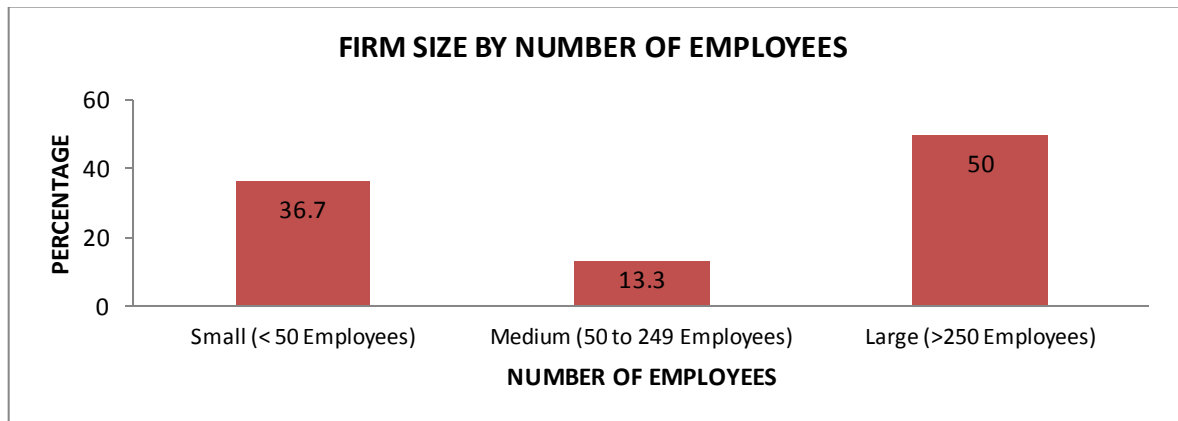
### 5.2 Sample Statistics

The respondents were from a broad spectrum of businesses with respect to their number of employees, turnover, product mixes and market shares. In order to provide context to the study, the respondents were categorised in various ways.

The first categorisation of the firms was by their number of employees. As demonstrated by Figure 5 below, 36.7% of firms surveyed had less than 50 employees, while 13.3% had between 50 and 249 employees, and half of the sample had over 250 employees.

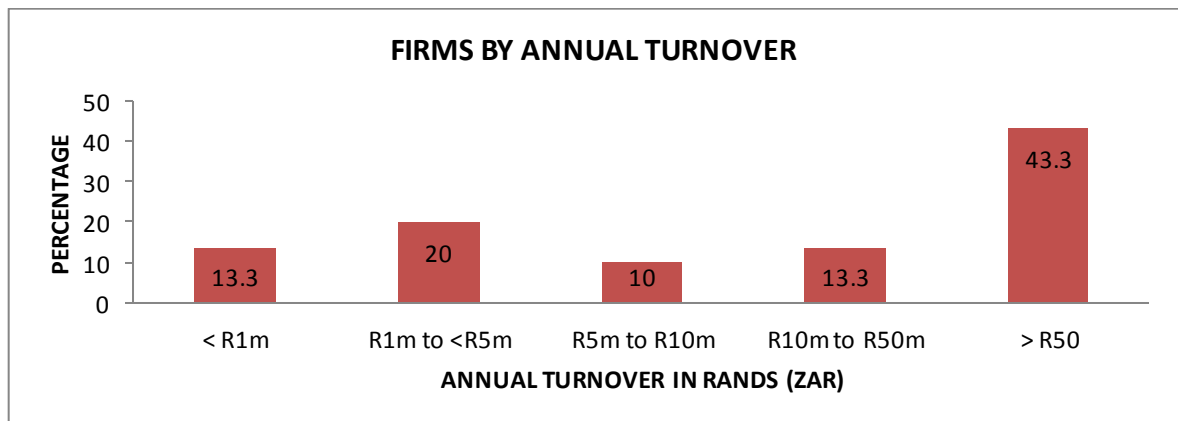


**Figure 5: Comparison of firm sizes with respect to their number of employees**



The second mechanism for classification was annual turnover. Figure 6 below depicts that 43.3% of firms surveyed had over R50 million generated in turnover per annum. The second highest segment was R1 million to R5 million with 20% of firms, both the segment below R1 million, and the segment between R10 million and R50 million contained 13.3% of firms, while the lowest represented segment of between R5 million to R10 million had 10% of firms.

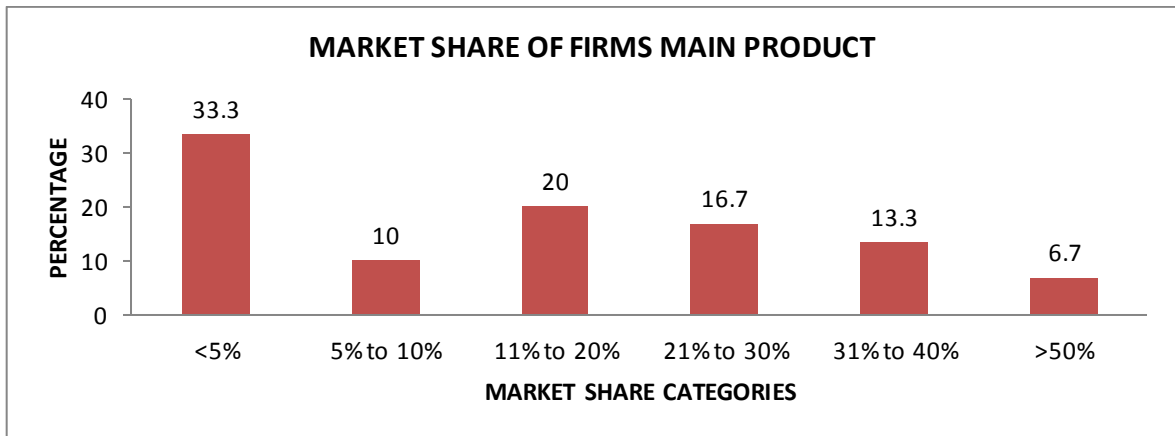
**Figure 6: Comparison of firms by their annual turnover**



When respondents were questioned about the market share of their main product within the South African market, one third of firms had less than a 5% market share. Less than half of the firms (46.7%) had between 5 and 30% market share, while 13.3% of firms had

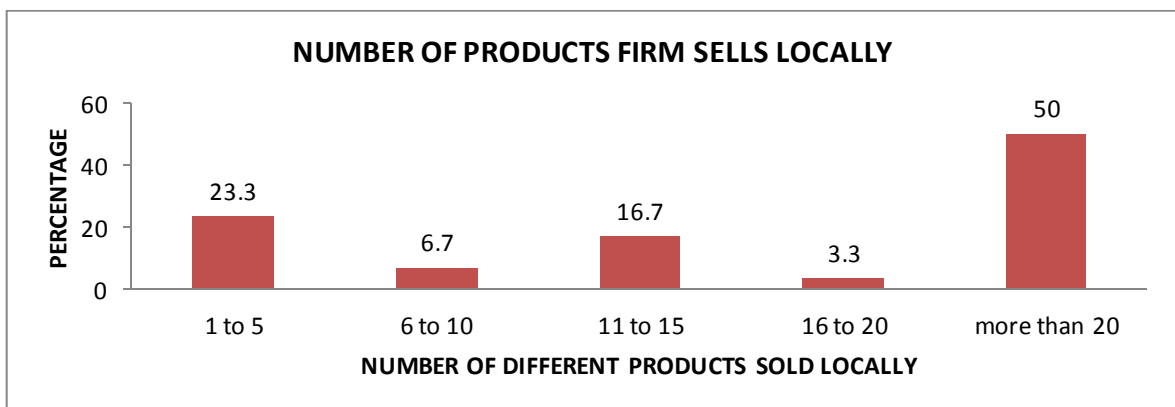
between 31% and 40% market share, and 6.7% of firms had above 50% market share. The visual representation can be seen in Figure 7 below.

**Figure 7: Comparison of firms by market share of their main product in South Africa**



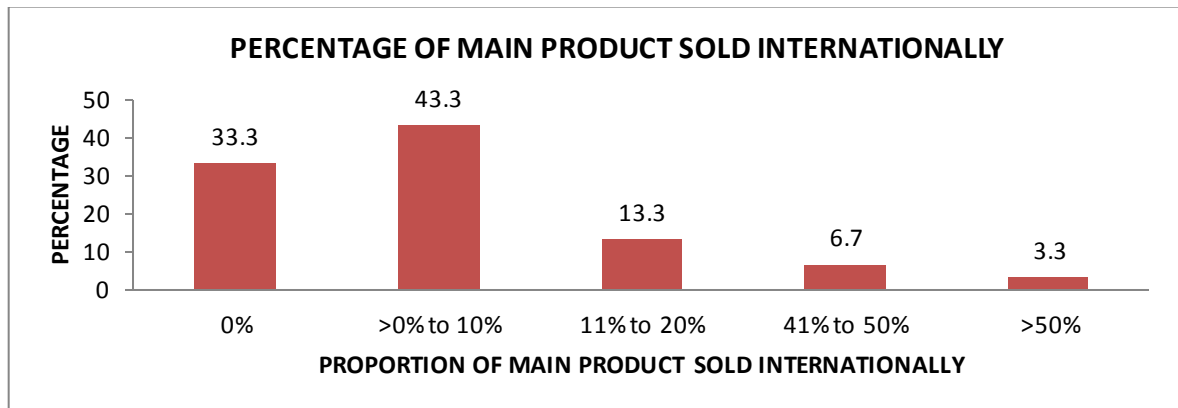
The firms were profiled by the number of different products that they sell within the South African market. This is shown in Figure 8 below, with half of the surveyed firms selling more than 20 products locally, and the second highest category was firms selling up to five products locally.

**Figure 8: Comparison of firm by their number of locally sold products**



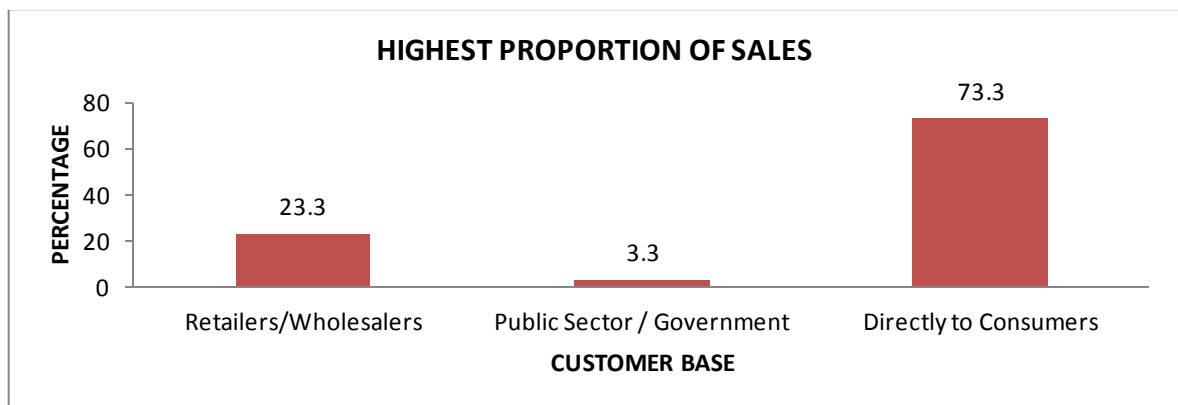
As revealed by Figure 9 below, more than three quarters of the firms surveyed sell at most 10% of their goods internationally, with a third of them having a strictly local presence.

**Figure 9: Comparison of firms by the number of products sold internationally**



A condition for eligibility of a firm to be surveyed was that firms had to engage in selling goods directly to consumers, but not all firms solely sell to consumers. Figure 10 below depicts that 73.3% of firms surveyed sell the highest proportion of their goods directly to consumers, while 23.3% sell the highest proportion of goods to retailers and wholesalers, and 3.3% have their highest sales to public sector clients. An example of this was a clothing retailer that had recently won a tender to supply school clothes to multiple schools.

**Figure 10: Comparison of firms by their highest sales channel**



## 5.3 Descriptive Statistics

This section provides the descriptive statistics representing the completed surveys, and is organised in the same sections as the literature review in chapter 2. The first area discussed is pricing frameworks, followed by competition and price strategies, price stickiness, price reviews, price changes, and finally time versus state dependency. For all tables, the highest means are highlighted in yellow, while factors of highest importance are highlighted in grey

### 5.3.1 *Pricing Frameworks*

Table 4 below expresses the relative importance of various pricing frameworks to firms in setting their prices. Fixed mark-up was the framework that had the highest frequency of “very important”, while variable mark-up had the highest “fairly important” frequency, as well as the highest frequency across those two categories. The two mark-up frameworks also had the highest frequency of importance overall, while competitor pricing had the second highest frequency in all important categories. The two mark-up and the competitor pricing frameworks also had the highest means.

The regulatory, statutory, and targeted return on capital frameworks had the highest “N/A” frequencies, and the lowest frequencies of “Very Important”. The median firm in the sample regarded both types of mark-up and competitor pricing as “Fairly Important”, and principal customer and target return on capital pricing frameworks as “Slightly Important”.

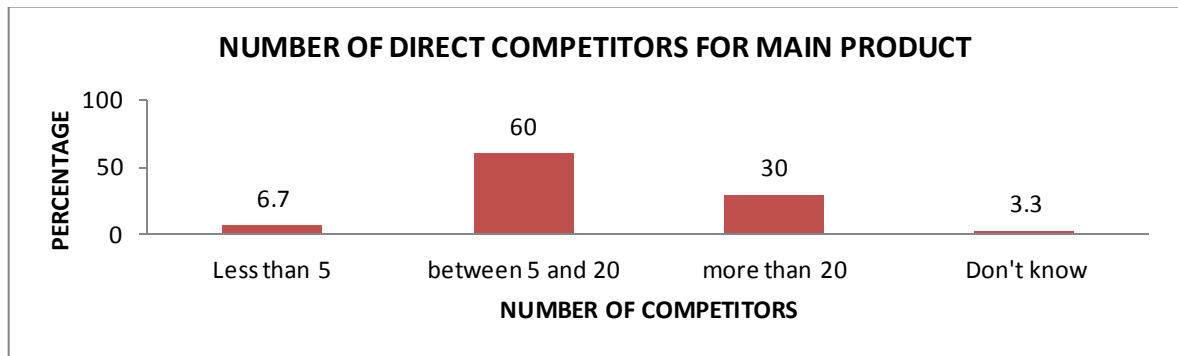
**Table 4: Comparison of the importance of various pricing frameworks**

PRICING FRAMEWORK	IMPORTANCE (%)					Mean	Median
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Price is made up of direct cost plus a fixed percentage mark-up	16.7	6.7	6.7	23.3	46.7	2.8	3.0
Price is made up of direct costs plus a variable percentage mark-up	10.0	3.3	6.7	53.3	26.7	2.8	3.0
Price is primarily specified by principal customer	30.0	13.3	16.7	33.3	6.7	1.7	2.0
Price is primarily specified by competitors' price	3.3	6.7	26.7	33.3	30.0	2.8	3.0
Price is determined by a regulatory agency	73.3	13.3	13.3	0.0	0.0	0.4	0.0
Price is set at a statutory level	70.0	6.7	16.7	6.7	0.0	0.6	0.0
Price is based on targeted return on Capital/Assets	36.7	10.0	10.0	33.3	10.0	1.7	2.0

### 5.3.2 Competition and Price Strategies

Firms were asked to state the range of competitors they have for their main product, and the results are classified in Figure 11 below. Of the sample, 60% have between 5 and 20 direct competitors, with 30% having more than 20, 6.7% having less than 5 competitors, and 3.3% stating that they did not know.

**Figure 11: The number of competitors a firm has in its main market**



Firms were then asked how the number of direct competitors today compared with the number ten years ago. Figure 12 shows that 56.7% of firms are facing higher levels of competition than they did ten years ago, while 23.3% of firms have the same number of competitors, and 20% of firms have fewer competitors than a decade ago.

**Figure 12: Comparison of firms by their highest sales channel**

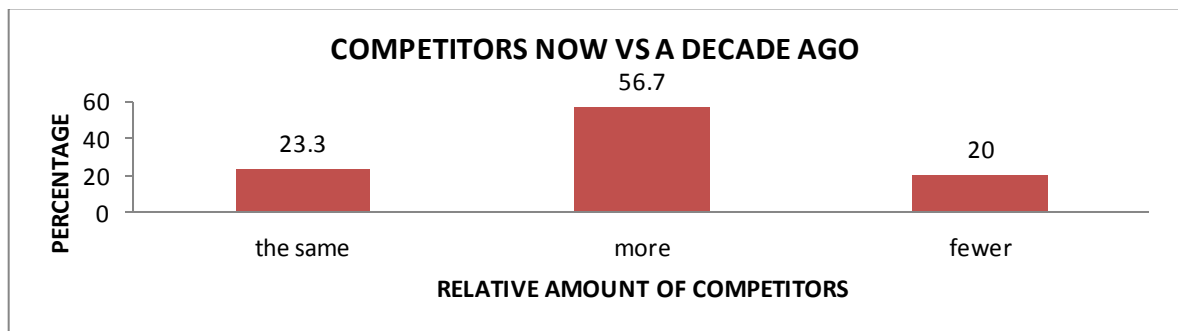
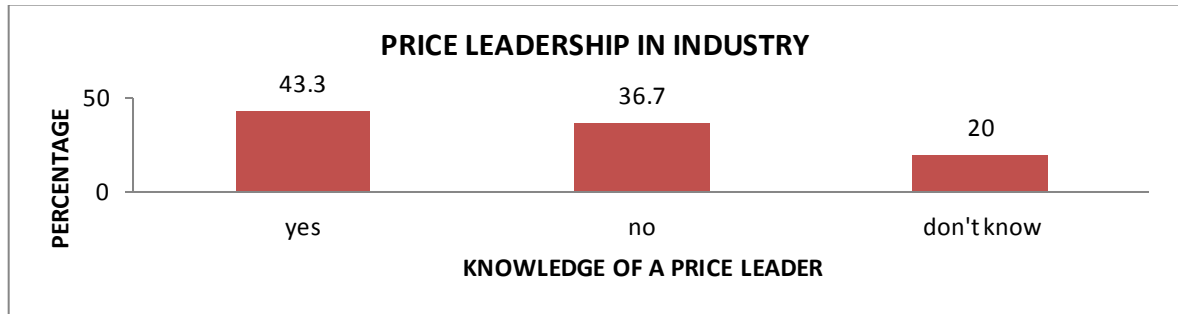


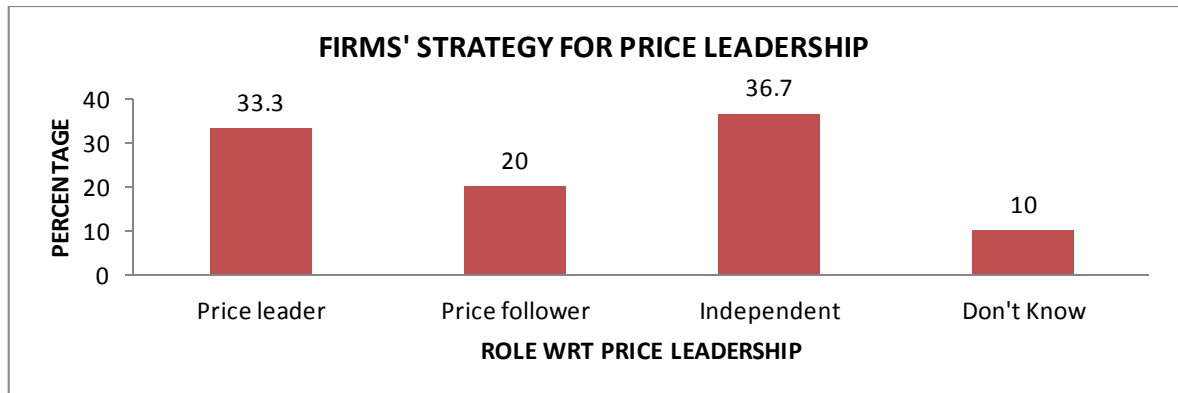
Figure 13 below demonstrates the results of asking firms whether they were aware of a price leader in their industry. 43.3% of firms compete in an industry with a price leader, while 36.7% of firms compete in an industry without one. 20% of firms were not aware of whether their industries had price leaders or not.

**Figure 13: Knowledge of price leadership**



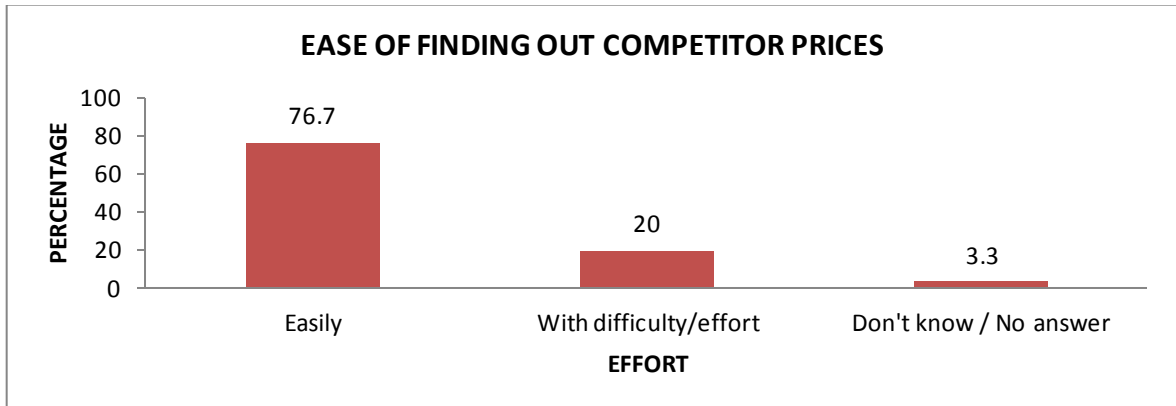
As a follow up question, firms were asked what their strategy is with respect to price leadership; in other words whether they engage in a leader, follower or independent role within their industry. As shown by Figure 14 below, a price leadership strategy was followed by one third of firms, while one fifth of firms are active price followers, 36.7% are independent price setters, and 10% of firms did not know.

**Figure 14: Firms' price leadership strategies**



Respondents were asked how easily they could obtain competitor prices, and the feedback depicted in Figure 15 explains that more than three quarters of respondents could easily retrieve competitor pricing. One fifth of respondents can gain competitor prices with significant effort, while 3.3% of firms did not know or declined to answer.

**Figure 15: Ease of finding out competitor prices**



Firms were asked to rate the importance of the factors that determine their competitiveness, the results are found in Table 5. The factor with the highest “very important” frequency was long term relationships with customers at 70%. Both the price of product and quality of product had high “very important” scores (60% and 70% respectively), and both also had no “N/A” or “not important” responses.

These three factors also had the three highest means, with quality of product having the highest mean of 3.57. The median firm in the sample rated price, quality, long term relationships with customers, and after sales service as “very important” and degree of differentiation and delivery period as “fairly important”.



**Table 5: Comparison of the importance of various factors of competitiveness**

FACTORS OF COMPETITIVENESS	IMPORTANCE (%)					MEAN	MEDIAN
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Price of your product			13.3	26.7	60.0	3.47	4.00
Quality of your product			6.7	30.0	63.3	3.57	4.00
Degree to which product can be distinguished from that of competitors		13.3	16.7	40.0	30.0	2.87	3.00
Delivery Period	6.7		6.7	40.0	46.7	3.20	3.00
Long Term relationship with customers		6.7	10.0	13.3	70.0	3.47	4.00
After sales service	10.0	6.7	6.7	13.3	63.3	3.13	4.00

### 5.3.3 Price Stickiness

Respondents were asked to provide feedback regarding the typical theories of price stickiness, by indicating their applicability to their firm's price setting. Table 6 below shows the frequency of applicability of the surveyed firms.

The highest frequencies of "Yes, very applicable" responses were prices don't change until costs change, with the highest frequency of 26.7%, followed by companies avoiding being first to increase price at 20%, and finally implicit contracts at 16.7%. These three theories had the highest means, and also had the lowest frequencies of "no" responses. The median firm rated the three theories with the highest means as "Yes, very applicable" and the remaining three theories as "Yes, slightly applicable".

**Table 6: Comparison of the applicability of price stickiness theories**

PRICE STICKINESS THEORIES	APPLICABILITY			Mean	Median
	No	Yes, slightly applicable	Yes, very applicable		
Information Set used to review and change prices - available infrequently	60.0	33.3	6.7	1.5	1.0
Companies delay price reductions because they don't want to be first in the industry to reduce prices	63.3	36.7	0.0	1.4	1.0
Companies delay price increases because they don't want to be first in industry to increase prices	43.3	36.7	20.0	1.8	2.0
Prices don't change until costs change	46.7	26.7	26.7	1.8	2.0
Explicit Contracts -Fixed price contracts make it difficult to pass on increases when contract is active	70.0	16.7	13.3	1.4	1.0
Implicit Contracts - Implied understanding with customers will not increase prices in depressed markets	40.0	43.3	16.7	1.8	2.0

Respondents were asked to rate the importance of various factors as reasons to decide to not increase prices, and the results are in Table 7 below. The reason for not increasing prices with the highest “Very Important” frequency is the maintenance of a threshold price (e.g. R9.99 rather than R10) at 40%. Along with the risk of competitors not increasing prices and the risk of antagonising customers, these three reasons all have over 60% of their responses as “fairly important” or “very important”, with combined frequencies of 63.3%, 66.7% and 66.7% respectively. These three reasons have the highest means of the sample.

Not increasing price due to the risk of having to readjust prices the other way afterwards had a relatively high mean of 2.4, but also 26.7% of respondents choosing either “N/A” or “Not Important”. All the other reasons had over 50% of their responses choosing “N/A” or “Not Important”.

The median firm had the risk of competitors not following suit, the risk of readjusting prices the other way, threshold pricing and the risk of antagonising customers as “Fairly

Important”. Implicit contracts, menu costs, and stable costs due to variable costs not changing were all “Not Important”, while explicit contracts were “N/A”.

**Table 7: Comparison of the importance of reasons to not increase price**

REASONS TO NOT INCREASE PRICE	IMPORTANCE					Mean	Median
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Risk That Competitors Don't Change Prices	13.3	3.3	16.7	40.0	26.7	2.6	3.0
Risk of Readjusting Prices the other way	20.0	6.7	16.7	26.7	30.0	2.4	3.0
Explicit Contracts	56.7	13.3	6.7	10.0	13.3	1.1	0.0
Implicit Contracts	43.3	10.0	13.3	16.7	16.7	1.5	1.0
Threshold price	13.3	10.0	13.3	23.3	40.0	2.7	3.0
Menu Costs	26.7	36.7	10.0	23.3	3.3	1.4	1.0
Variable Costs don't change	36.7	16.7	20.0	10.0	16.7	1.5	1.0
Antagonise customers	13.3	6.7	13.3	40.0	26.7	2.6	3.0

Table 8 below is the same format as Table 7 above, but relates to reasons to not reduce prices. Threshold pricing had the highest frequency of “Very Important” responses at 33.3%, and has the highest mean at 2.2. The next highest means are the risk of readjusting prices at 2, and the risk of antagonising customers at 1.9, and both along with threshold pricing are the only reasons with less than 50% of responses in the “N/A” or “Not Important” categories.

The median firm rated the risk of competitors change prices, the risk of readjusting their prices, threshold pricing and the risk of antagonising customers as “Slightly Important”,

implicit contracts, menu costs and variable costs remaining constant as “Not Important”, and explicit contracts as explicit.

**Table 8: Comparison of the importance of reasons to not reduce price**

REASONS TO NOT REDUCE PRICE	IMPORTANCE (%)					Mean	Median
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Risk Competitors Change prices	26.7	23.3	20.0	23.3	6.7	1.6	1.5
Readjust Own Prices	16.7	23.3	20.0	23.3	16.7	2.0	2.0
Explicit	53.3	13.3	3.3	16.7	13.3	1.2	0.0
Implicit	43.3	16.7	6.7	16.7	16.7	1.5	1.0
Threshold	20.0	16.7	20.0	10.0	33.3	2.2	2.0
Menu Costs	30.0	23.3	20.0	20.0	6.7	1.5	1.0
Variable costs Don't change	36.7	16.7	30.0	10.0	6.7	1.3	1.0
Antagonise Customers	26.7	16.7	16.7	20.0	20.0	1.9	2.0

When asked if there were any other compelling reasons for price stickiness, respondents selected whether an item applied to them or not. The results in Table 9 demonstrate that the risk of affecting customer relationships had the highest frequency, with it applying to 46.7% of firms.

**Table 9: Applicability of other reasons for price stickiness**

OTHER REASONS FOR STICKINESS	Applicable Percent
Costs of price increases too high	33.3
Factors affecting price don't change enough	23.3
More regular changes will affect customer relationships	46.7
More likely to amend product characteristics	10.0
Changes are more notable during low inflation	23.3

As can be seen in Table 10 below, a Chi squared test was carried out in order to test the significance of the difference between price reviews and price changes. In order to perform this test, a two by two matrix was needed. In order to do so, responses for both reviews and changes were split by those that reviewed or changed their prices by more or less than on a monthly basis. A monthly basis was chosen as the median firm reviewed their prices on a monthly basis.

As revealed in Table 10 below, a significance value of 0.046 was attained, below the threshold of 0.05, and is hence statistically significant. This shows a significant difference between the regularity of price reviews and price changes.

**Table 10: Results of CHI Squared test for significance of difference between price reviews and price changes**

Tests	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.662 <sup>a</sup>	1	0.017		
Continuity Correction	3.999	1	0.046		
Likelihood Ratio	6.016	1	0.014		
Fisher's Exact Test				0.026	0.021
Linear-by-Linear Association	5.473	1	0.019		
N of Valid Cases	30				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.13.

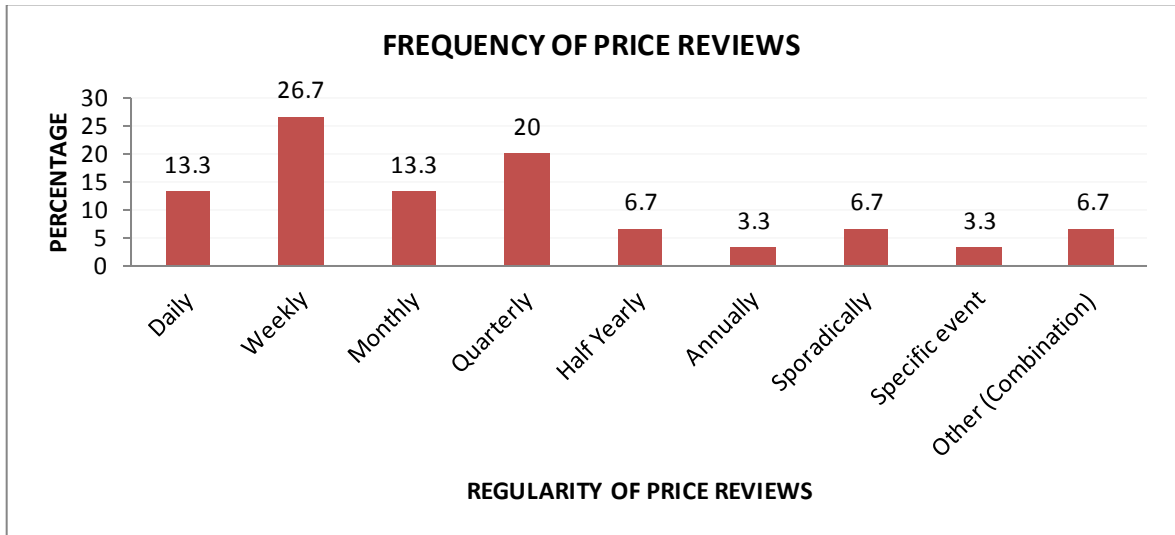
b. Computed only for a 2x2 table

### 5.3.4 *Price Reviews and Observation costs*

When firms were asked how regularly they reviewed their prices, the options available to firms were daily, weekly, monthly, quarterly, half yearly, annually, sporadically, in response to specific events, or a combination. As can be seen in Figure 16, 26.7% of firms review their prices weekly, 20% do so quarterly and daily and monthly reviews are followed by 13.3% of firms each. Half-yearly reviews are followed by 6.7% of firms and annual reviews are used by 3.3% of firms.

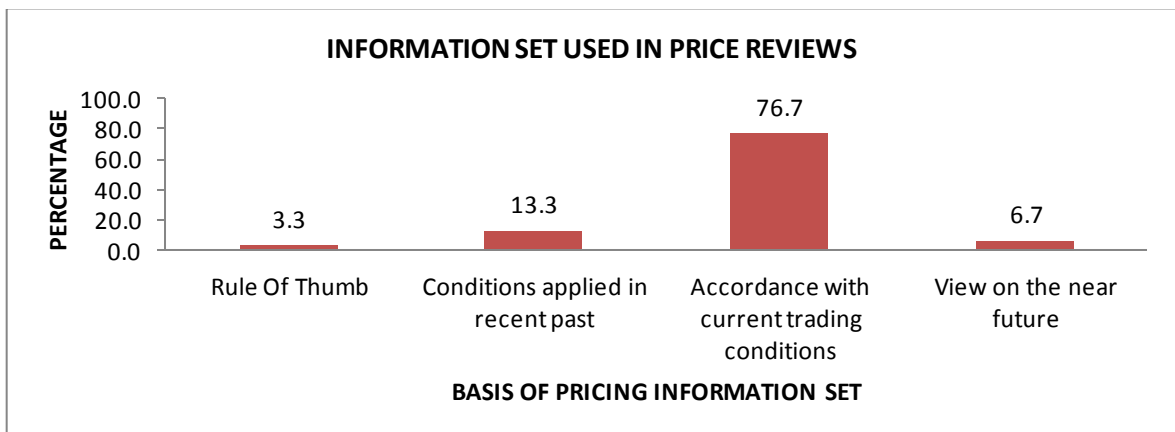
Apart from those firms that followed regular price reviews, 6.7% of firms reviewed prices sporadically, 3.3% review them due to specific events, and 6.7% of firms review their prices both in regular intervals, but also due to specific events.

**Figure 16: Frequency of price reviews**



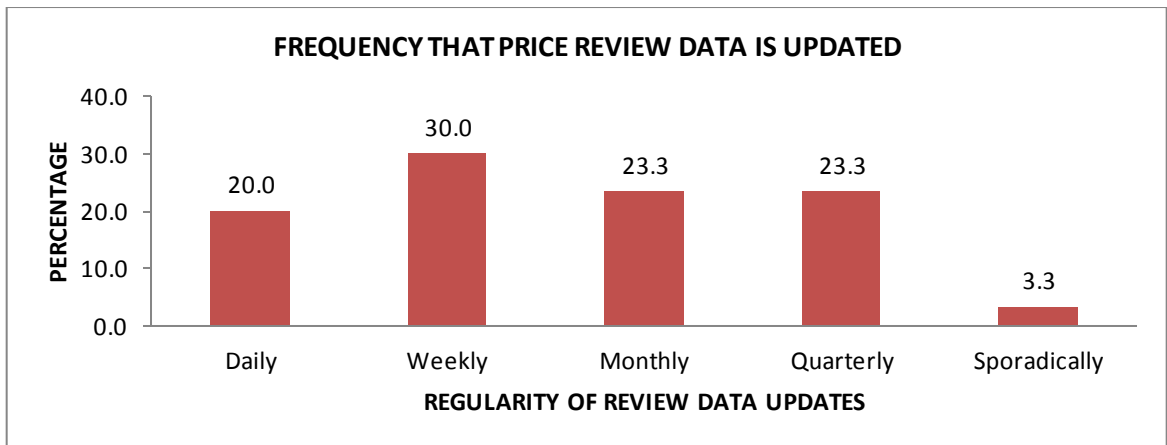
When questioned about the information set used by firms for price review purposes, Figure 17 demonstrates that the majority (76.7%) of firms review current trading conditions. The second highest frequency was the conditions applied in the recent past, at 13.3%, the view of the near future got 6.7% of respondents, while the lowest frequency was rule of thumb at 3.3%.

**Figure 17: Information set used in price reviews**



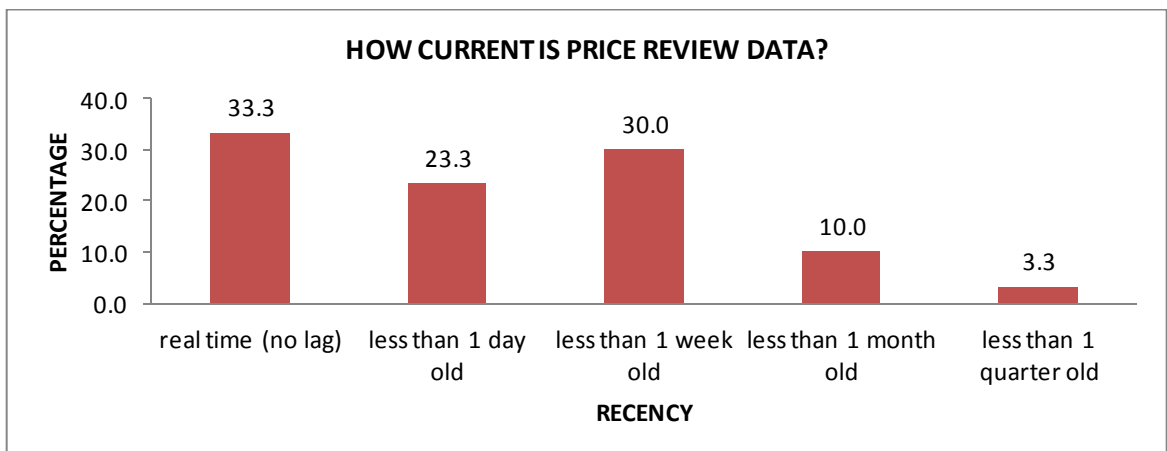
The follow up question related to how often the information set used by firms in price reviews is updated. The results in Figure 18 show that 30% of firms updated their review information weekly, 23.3% of firms updated monthly, same updated quarterly, 20% updated daily and the lowest frequency were those that updated sporadically.

**Figure 18: Comparison of frequency that data is updated for reviews**



The second follow up question to the information set used for reviews questioned firms about how current their review data is. Evident in Figure 19, one third of firms use real time data, 23.3% of firms use data less than 1 day old, 30% of firms use data less than a week old, 10% of firms use data less than 1 month old, while 3.3% of firms use data less than 1 quarter old.

**Figure 19: Comparison of how current review is**



### 5.3.5 Price Changes and factors that affect them

This section relates to price changes and the factors that affect them; the first graph shown in Figure 20 shows the frequency with which firms change their prices. Daily changes are used by 6.7% of firms, weekly changed by 10% of firms and 20% of firms used monthly changes. Changes were prepared quarterly by 6.7% of firms, while half yearly and annual changes are performed by 10% and 6.7% of firms respectively.

Firms performing sporadic changes were 10% of respondents, 26.7% of firms change prices according to specific events and 3.3% of firms use a combination method.

**Figure 20: Frequency of price changes**

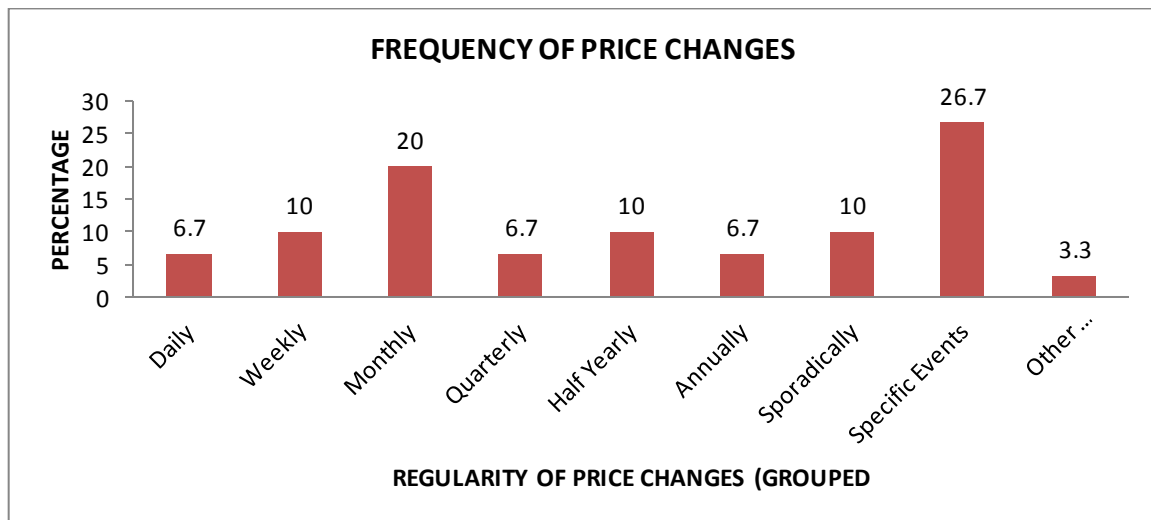


Table 11 below shows how respondents rated the importance of various reasons for price increases. Input cost increase had the highest mean of 2.6, and had the highest frequency of “Very Important” responses of 36.7%. The next two highest means and “Very Important” frequencies in descending order of both were an actual rise in demand, with a mean of 2.3 and frequency of 33.3%, and an actual price increase by domestic rivals, with a mean of 2.2 and frequency of 20%.

The least significant reason was that increases never happen and was rated as “N/A” by 96.7% of firms, while actual price increases by overseas rivals, an expected price increase



by overseas rivals and regulation cost increases all had 56.7% or more of the sample rate them as “N/A”.

The median firm rated input cost increases, actual rise in demand, expected rise in demand, and actual price increases by domestic rivals as “Fairly Important”. Labour cost increases, finance cost increases, fixed cost increases and expected cost increases by domestic rivals were all “Slightly Important”. Market share increases were rated as “Not Important”, and increases never happening, actual and expected increases by overseas rivals, and regulation cost increases all had scores of “N/A” by the median firm.

**Table 11: Comparison of importance of causes of price increases**

REASONS FOR PRICE INCREASES	IMPORTANCE (%)					Mean	Median
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Increase-Never	96.7	3.3	0.0	0.0	0.0	0.1	0.0
Increase-Labour Costs increase	30.0	6.7	16.7	26.7	20.0	2.0	2.0
Increase-Input Costs increase	20.0	3.3	13.3	26.7	36.7	2.6	3.0
Increase-Finance Costs increase	26.7	10.0	23.3	23.3	16.7	1.9	2.0
Increase- Fixed Costs increase	30.0	6.7	26.7	26.7	10.0	1.8	2.0
Increase-Actual Rise in Demand	23.3	10.0	13.3	20.0	33.3	2.3	3.0
Increase-Expected Rise in Demand	30.0	6.7	13.3	33.3	16.7	2.0	2.5
Increase-Actual Price increase by domestic rivals	20.0	6.7	23.3	30.0	20.0	2.2	2.5
Increase-Expected Price increase by domestic rivals	26.7	13.3	20.0	30.0	10.0	1.8	2.0
Increase-Actual Price increase by overseas rivals	56.7	26.7	6.7	10.0	0.0	0.7	0.0
Increase-Expected Price increase by overseas rivals	60.0	23.3	6.7	6.7	3.3	0.7	0.0
Increase-Market Share Increase	30.0	36.7	10.0	13.3	10.0	1.4	1.0
Increase-Regulation Costs increase	56.7	6.7	10.0	10.0	16.7	1.2	0.0

Table 12 is in the same format as Table 11 above, but relates to the reasons for price reductions as opposed to price increases. An actual price reduction from local rivals had the joint highest mean at 2.3, but had the highest “Very Important” frequency of 30%. The next two highest means and “Very Important” scores were an actual decline in demand,

with a mean of 2.3 and frequency of 26.7%, and an expected price reduction by domestic rivals with a mean of 2 and frequency of 23.3%.

Reductions never taking place, labour cost decreases, finance cost decreases, productivity increases, and actual and expected reductions by overseas rivals all had over 50% of the sample rate them as “N/A” or “Not Important”.

The median firm rated actual declines in demand and actual price reductions by domestic rivals as “Fairly Important”, input cost decreases, expected decline in demand, expected reductions by domestic rivals and market share declines as “Slightly Important”. The remaining reasons for reduction were rated by the median firm as “N/A” or “Not Important”.

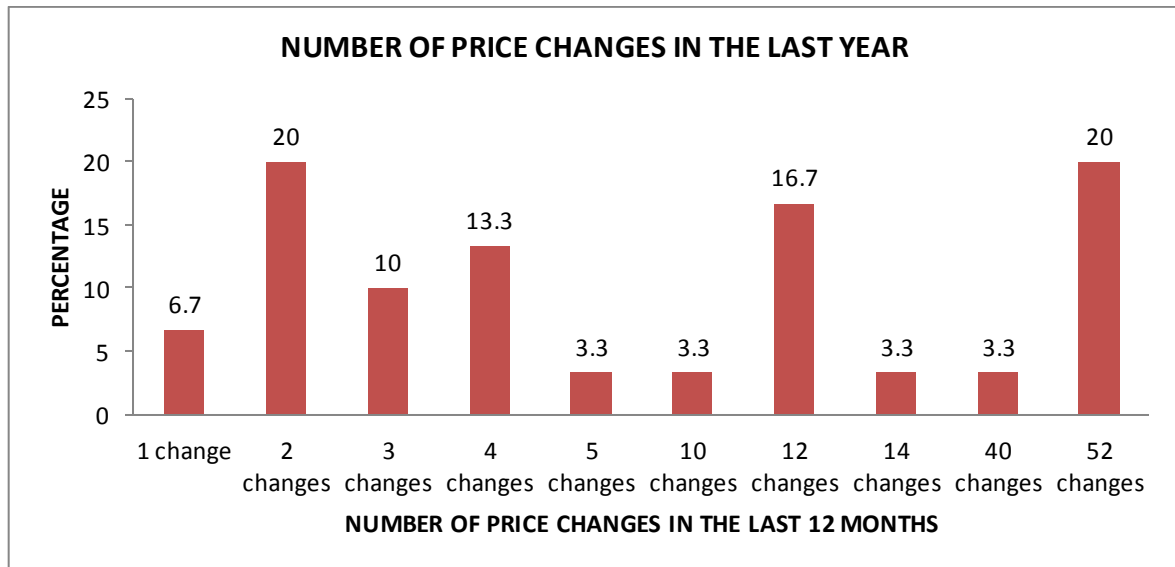
**Table 12: Comparison of importance of causes of price reductions**

REASONS FOR PRICE REDUCTION	IMPORTANCE (%)					Mean	Median
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Reduction-Never	0.0	61.0	13.3	10.0	16.7	1.2	0.0
Reduction-Labour Costs decrease	43.3	20.0	13.3	10.0	13.3	1.3	1.0
Reduction-Input Costs decrease	30.0	10.0	20.0	16.7	23.3	1.9	2.0
Reduction-Finance Costs decrease	30.0	23.3	16.7	20.0	10.0	1.6	1.0
Reduction-Demand Decline Actual	23.3	3.3	23.3	23.3	26.7	2.3	2.5
Reduction-Productivity Increase	33.3	20.0	16.7	13.3	16.7	1.6	1.0
Reduction-Demand Decline Expected	26.7	13.3	23.3	13.3	23.3	1.9	2.0
Reduction-Actual price reduction of domestic rivals	23.3	6.7	13.3	26.7	30.0	2.3	3.0
Reduction-Expected price reduction of domestic rivals	26.7	6.7	26.7	16.7	23.3	2.0	2.0
Reduction-Actual price reduction of overseas rivals	50.0	20.0	16.7	6.7	6.7	1.0	0.5
Reduction-Expected price reduction of overseas rivals	56.7	20.0	23.3	0.0	0.0	0.7	0.0
Reduction-Market Share Decline	30.0	10.0	13.3	33.3	13.3	1.9	2.0
Reduction-Regulation Costs decrease	60.0	6.7	13.3	13.3	6.7	1.0	0.0

Firms were asked in an open ended fashion about how many actual price changes they had administered in the previous 12 months. The results are depicted in Figure 21 below, which shows that the highest frequencies, at 20% of the sample, were those firms that changed their prices weekly or biannually. Monthly changes accounted for 16.7% of firms, quarterly changes accounted for 13.3% of the sample, three changes in the year

accounted for 10% of the sample, while all other categories fell at 6.7% of the sample or less.

**Figure 21: Number of actual price changes in the last 12 months**



As stated in Chapter 2, special attention needs to be paid to the effects of the exchange rate to South African retail firms. When asked if they import inputs or finished goods, 63.3% of firms answered that they do, while 36.7% of respondent firms do not engage in imports, as a result of this following 4 firms related to exchange rates have a minimum of 36.7% non applicability.

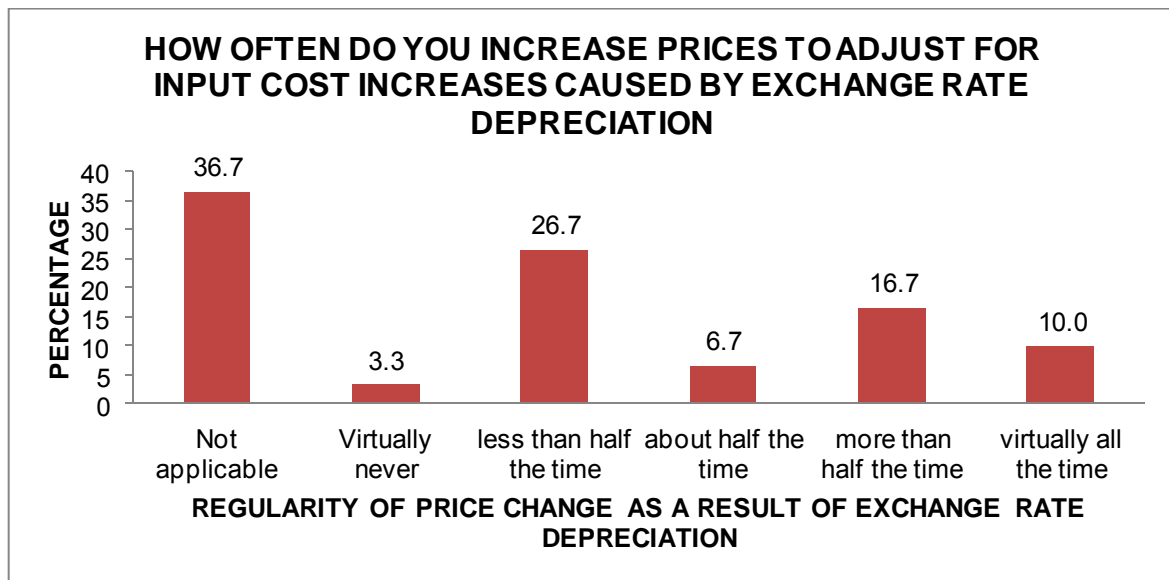
Firms were asked to rank the various actions they could take in response to the exchange rate depreciating relative to each other. A summary of the responses shown as a ranking is provided in Table 13 below, revealing that increasing the selling price is the most popular response, which further indicates that firms do not have many other avenues for mitigation.

**Table 13: Ranking of the actions by firms in response to exchange rate depreciation**

RESPONSE TO EXCHANGE RATE DEPRECIATION	RANKING
Exchange rate depreciation - increase selling prices	1
Exchange rate depreciation - Shift input to local supplier	4
Exchange rate depreciation-reduce other input costs	2
Exchange rate depreciation-increase productivity or volumes of activity	3
Exchange rate depreciation-reduce other costs	5
Exchange rate depreciation-other means	6

When asked how often they adjust prices for an input cost increase due to exchange rate depreciation, as shown in Figure 22 below, only 10% of the sample (16% of importing firms) adjust prices virtually all the time, while only 33.4% of the sample (53% of importing firms) adjust their prices half the time or more.

**Figure 22: How often firms increased prices in response to exchange rate depreciation**



When asked how much the exchange rate would have to depreciate before necessitating a price adjustment, 50% of firms did not answer this question as it was not applicable to them (the 36.7% of firms that do not engage in importing) or they did not know, as presented in Figure 23 below. Of the firms that answered this question (excluding the 50%

that did not answer or were not applicable), only 13.4% of them would adjust their prices for a 5% depreciation in exchange rate, while 46.6% of them would re-adjust their prices when exchange rates depreciated between 5% and 10%, and the remaining 40% of firms answered that they would adjust their prices before the exchange rate depreciation exceeded 20%.

**Figure 23: How much must exchange rates depreciate before prices are increased**

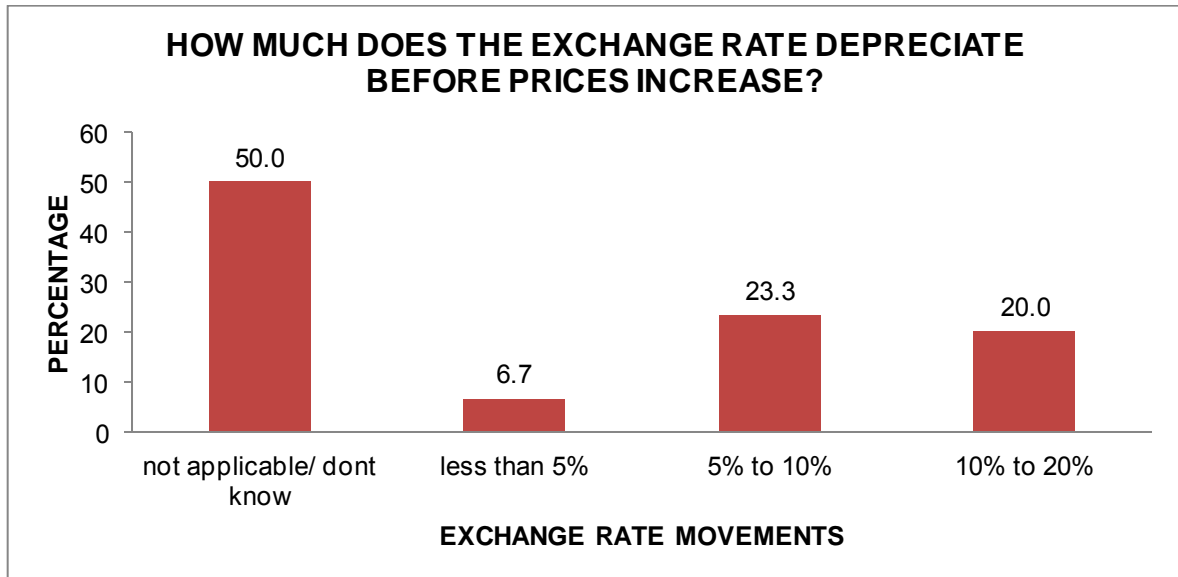


Figure 24 below presents the results of when firms were asked whether exchange rate costs were more difficult to pass on than they were a decade ago. Of the respondents, 40% said the statement did not apply to them, most likely as they were not in that role or company ten years ago. Another 40% of respondents said the pass on of exchange rate costs had become more difficult than the last decade, and 20% said that it had not.

**Figure 24: Difficulty of exchange rate pass through versus 10 years ago**

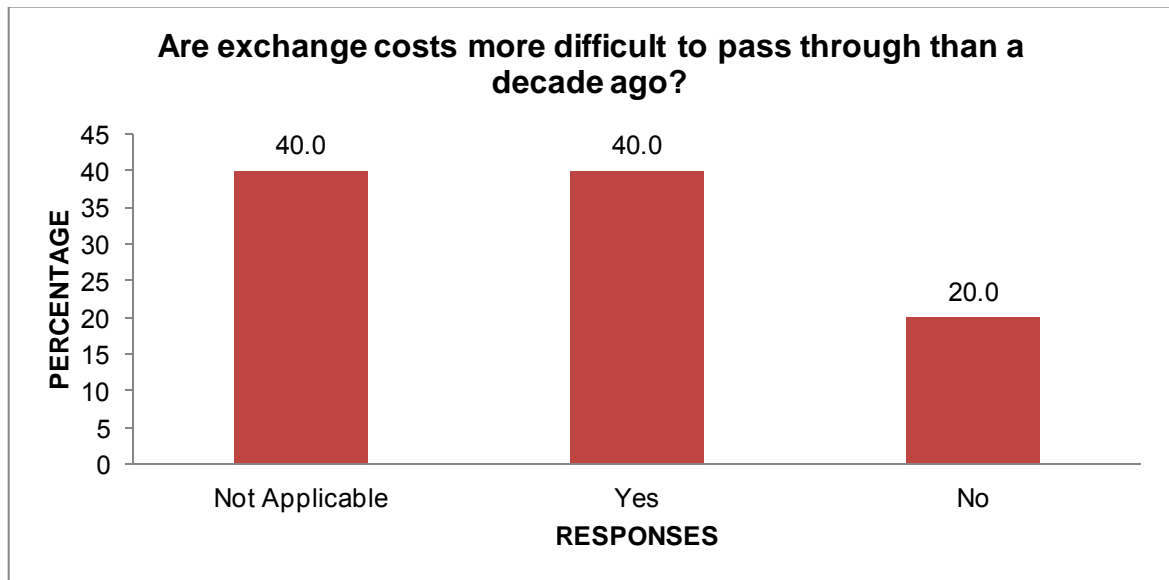
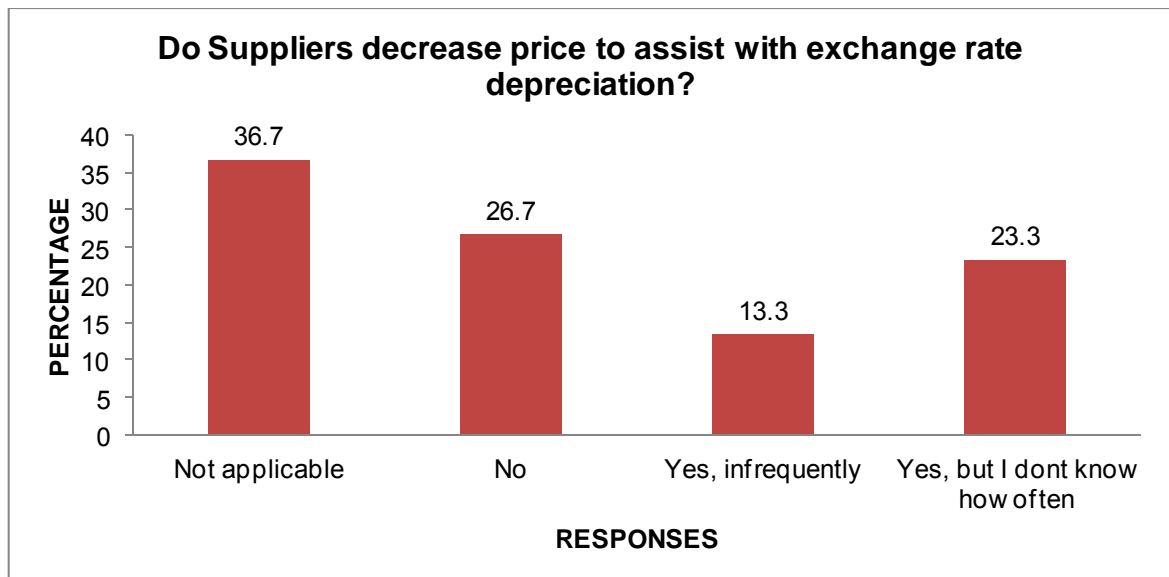


Figure 25 below shows the results of when firms were asked if their international suppliers provide them with pricing support to negate the effect of exchange rate depreciation. When ignoring the 36.7% of firms that do not engage in importing, 42% of the importing firms do not receive support, while the remaining 58% of firms receive infrequent or irregular support from their supplier, but no single receives support on a stable basis.

**Figure 25: Overseas supply assistance during exchange rate depreciation**





### 5.3.6 *Time versus State Dependant Rules*

In order to show results for time and state dependency, Table 11 above was adapted, so that daily, weekly, monthly, quarterly, half yearly and annual reviews were collected as regular reviews. Figure 26 below shows that 83.3% of surveyed firms engage in regular price reviews, while 10% review prices in response to specific events, and 6.7% of firms use a combination method.

**Figure 26: Time versus state dependency of reviews**

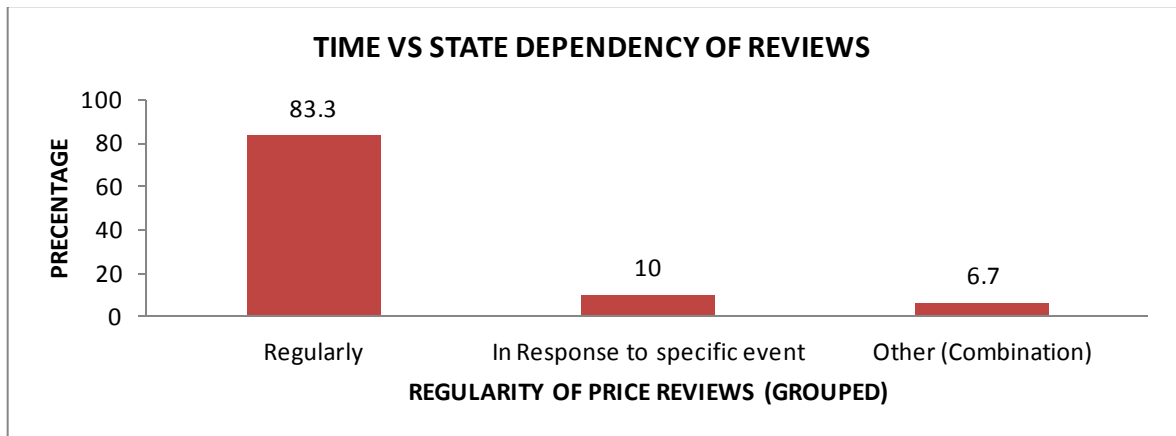
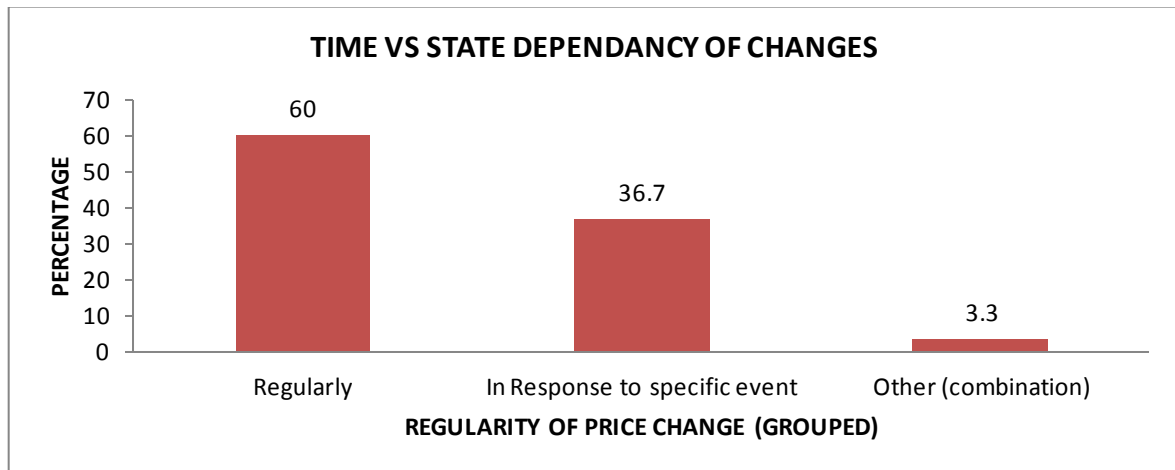


Figure 27 below is similar in nature to Figure 26 above; with the main difference being that Figure 27 regards changes instead of reviews. Figure 27 depicts that 60% of respondent firms follow regular price changes, 36.4% change prices in response to specific events, while 3.3% of respondents use a combination method.

**Figure 27: Time versus state dependency of changes**



## 5.4 Conclusion

The sample include 50% of firms with over 250 employees, 43.4% that have a turnover of above R30 million per annum, and 50% of the sample sold more than 20 products locally. The majority of firms had between 5 and 20 competitors, and 56.7% of firms have more direct competitors now than 10 years ago. Price leadership or following are strategies employed by the majority of firms, and 76.7% of firms can easily find out competitor prices.

Price, quality and long term relationships with customers were the most important factors of competitors to respondents. The most popular reasons to not increase prices were threshold prices, competitors not following suit and not wanting to antagonise customers. The most popular reasons to not decrease prices were threshold prices, readjusting of prices and fear of antagonising customers.

The highest frequency of price reviews were weekly, with the majority of firms using current trading information, typically updated weekly, and with the majority of firms having real time review information. The highest frequency for changes was due to specific events.

The highest reasons for price increases were increased input costs, actual rises in demand and actual increases in price by domestic rivals. The highest reasons for price

decreases were actual declines in demand, and expected and actual reductions of price by domestic rivals.

## CHAPTER 6 - DISCUSSION OF RESULTS

### 6.1 Introduction

The results described in Chapter 5 above demonstrated summaries of the quantitative questions asked in the survey discussed in Chapter 4. The objective of Chapter 6 is to discuss the results shown in Chapter 5 in relation to the literature described in Chapter 2. This will enable the research propositions stated in Chapter 3 to be answered quantitatively.

### 6.2 Competition in the South African retail sector

Copaciu et al. (2010) explained the importance of the competitive environment that firms operate in with respect to stickiness, stating, “In a perfectly competitive environment there will be no price rigidities as firms will set their prices equal with marginal costs” (Copaciu, Neagu, & Braun-Erdei, 2010, p. 237). The authors continue to propound that for nominal rigidities to exist, there must be contradictions in the environment to perfect competition, typically through differences in market power.

The majority of firms (60%) had 20 or fewer direct competitors, and 6.7% of the sample had fewer than five, indicating relatively high industry concentration. When asked about the intensity of competition in their industries, 86.7% of firms indicated strong competition, and when asked whether the number of competitors has increased over the last decade, 56.7% of firms confirmed that the number of competitors had increased.

When firms were asked about price leadership, 43.3% of firms were aware of price leadership within their industries. This was contradicted by the fact that when asked what their price leadership strategy was, 90% of firms said they were leaders, followers or independents, and only 10% were unaware of price leadership within the industry. When following up with respondents it seemed that firms that did not indicate knowledge of price leadership in their industries would maintain their pricing independence in the presence of leadership.

**Table 14: Cross tabulation of price leadership strategy and market share**

		Market share						Total
		<5%	5% to 10%	11% to 20%	21% to 30%	31% to 40%	>50%	
<b>Price Setting Strategy</b>	Price leader	10%	3%	3%	10%	7%	0%	33%
	Price follower	3%	7%	3%	0%	0%	7%	20%
	Independent	17%	0%	10%	7%	3%	0%	37%
	Do not Know	3%	0%	3%	0%	3%	0%	10%
<b>Total</b>		33%	10%	20%	17%	13%	7%	100%

As can be seen in Table 14 above, half of the firms acting as price leaders have 20% of the market share or less, and none have higher than 40% of the market share, indicating that they cannot be engaging in dominant price leadership. This is supported by the fact that all of the firms with over 50% market share act as price followers. This relative market strength of price followers versus price leaders is disproportionate for industries with dominant price leadership, and indicates that leaders are defined by their information as opposed to their market power. This further specifies that the dominant form of price leadership in South African retail is barometric price leadership, with 76.7% of firms able to find out their competitors' prices easily.

When evaluating price discrimination in the South African retail sector, 53.3% of firms have publicly posted prices, while 46.7% of surveyed firms have instances of transaction prices differing from listed ones, evidencing price discrimination, supported by the fact that 50% of firms strictly follow uniform pricing. Of the firms that responded to the survey, 23.3% offer discounts based on quantities purchased, and 26.7% of firms offer discounts on a case by case basis; these can be considered second degree and first degree price discrimination respectively.

### **6.3 Research Proposition 1: Retail firms predominantly follow a mark-up pricing strategy**

As stated in Chapter 2, firms have a series of options for how to build their prices. Kotler and Keller (2009) stated that mark-up pricing remains the most popular pricing, and this was reflected by the results of Fabiani, et al. (2006) who found that 56% of prices in the Euro zone area were set on a mark-up basis.

The survey used for this study asked firms what the importance of seven different pricing frameworks was to them when setting their prices. The first two options both reflected mark-up pricing, specifically fixed mark-up pricing and variable mark-up pricing.

As shown in the results in Chapter 5 above, fixed mark-up was the framework with the highest frequency of “Very Important” responses at 46.7% of the sample, variable mark-up pricing was third highest at 26.7% (marginally behind competitor pricing at 30% of the sample). Variable mark-up had the highest “Fairly Important” frequency of 53.3%, and fixed mark-up had a “Fairly Important” frequency of 23.3%.

**Table 15: Comparison of importance of pricing frameworks with collapsed mark-up**

PRICING FRAMEWORK	IMPORTANCE (%)					Mean	Median
	N/A	Not Important	Slightly Important	Fairly Important	Very Important		
Price is made up of direct cost plus a mark-up	3.3	0.0	0.0	33.3	63.3	2.8	3.0
Price is primarily specified by principal customer	30.0	13.3	16.7	33.3	6.7	1.7	2.0
Price is primarily specified by competitors' price	3.3	6.7	26.7	33.3	30.0	2.8	3.0
Price is determined by a regulatory agency	73.3	13.3	13.3	0.0	0.0	0.4	0.0
Price is set at a statutory level	70.0	6.7	16.7	6.7	0.0	0.6	0.0
Price is based on targeted return on Capital/Assets	36.7	10.0	10.0	33.3	10.0	1.7	2.0

Table 15 above shows the same results as those in Table 4 in Chapter 5, but with fixed mark-up and variable mark-up pricing collapsed into one framework. When considering fixed mark-up pricing and variable mark-up pricing collectively as mark-up pricing, 63.3% of firms consider mark-up pricing as “Very Important”. Most firms (96.7%) considered one of the two mark-up pricing frameworks to be either “Very Important” or “Fairly Important”.

The results reveal that mark-up pricing is definitely the dominant pricing framework in the sample. The South African retail sector is thus consistent with Fabiani et al. (2006) at 56%, and Copaciu et al. (2009) at 43% who had price setters using mark-up as the dominant strategy. Greenslade and Parker (2010) stated the dominant framework to be competitor pricing at 68%, but this is due to fixed and variable mark-up being dealt with separately at 44% and 58% respectively.

#### **6.4 Research Proposition 2: Retail price reviews and price changes are time-dependant**

As was discussed in Chapter 2, there are two ways in which firms can schedule their price review processes. Firms can either review their prices at regularly intervals, or they can do

so in response to particular events. Price reviews can be time dependent, state dependant, or could be a combination of both methods.

Vital to the price review process is the information set used by firms, and as shown in Figure 17, the majority of firms (76.7% of the sample) use data regarding current trading conditions (as opposed to past conditions or future projections) to conduct price reviews. The vast majority of firms (96.7%) in Figure 18 update their review information set on a regular basis, although with no heavily dominant period, with daily, weekly, monthly and quarterly updates all similarly popular. The majority of firms in Figure 19, at 86.7% of the sample, have price review data that is not more than 1 week old.

Figure 26 in Chapter 5 explained that 83.3% of the surveyed firms review their prices at regular intervals, supporting research proposition 2. It can be seen from Figure 27 in that 60% of firms in the retail sector in South Africa change price according to regular intervals as well, also supporting proposition 2.

**Table 16: Comparison of Time versus State Dependency across studies**

DEPENDENCY	Retail South Africa	UK	Canada	Romania	Euro
STATE	10%	15%	34%	43%	20%
TIME	83%	42%	66%	15%	34%
Combo	7%	43%	0%	42%	46%

Sources: (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010; Fabiani, et al., 2006)

Table 16 above illustrates a comparison of time versus state dependency across some of the various price setting surveys in different regions. When analysing the data, it is evident that the South African retail sector is atypical in that it has a very high degree of time dependency. This is most likely due to the fact that the other studies are across sectors, and the effort and coordination costs of conducting price reviews and price changes in a retail business is relatively high, due to the wide range of products and the number of stock items.



## **6.5 Research Proposition 3: There is a delay in retail price changes in response to microeconomic and macroeconomic shocks**

The discussion of research proposition 2 in Section 6.3 above exposed that price reviews occurred more regularly than price changes did, with frequencies of 83.3% and 60% respectively. When analysing the review and price data in more depth, as shown in Figure 16, 53.3% of firms reviewed their prices on a monthly basis or more often. The corresponding data for price changes, in Figure 20 showed that only 36.7% of firms changed their prices on a monthly or more regular basis. This is consistent with the results from the UK, Romanian and Canadian studies that showed that not all price reviews result in price changes (Parker & Greenslade, 2012; Copaciu et al., 2010; Amirault et al., 2006). When analysing the data from Table 10 in section 5.3.3, the Chi squared test found the difference between the regularity of price reviews and price changes to be statistically significant, with a significance value of 0.046.

The manner in which firms deal with exchange rate depreciations, discussed in section 5.3.5, further indicates stickiness in retail prices in South Africa. Firms ranked an increase in prices as their most important response to exchange rate depreciation, and despite this only 53% of importing firms adjust their prices for half or more of the exchange rate depreciations they experience. This is further supported by the fact that of firms that respond to exchange rate decreases with price increases; only 13.4% adjust prices for depreciation of up to 5%, while 40% of firms only adjust prices for depreciation of above 20%.

The results in Table 6 show the applicability of typical stickiness theories, with prices not changing unless costs change, companies avoiding being the first in their industry to change their prices, and implicit contracts having the highest frequencies of applicability.

Firms were asked to rate the importance of various factors causing them to not increase prices, and the risk of competitors not following suit, the risk of antagonising customers and the maintenance of a threshold price were the factors with the highest levels of importance. The stated reasons indicate a strong theme of the importance of customer relationships, as threshold pricing and avoiding antagonising customers are practices to preserve customer relationships. The risk of competitors not changing their prices

represents coordination failure between firms, which would result in a firm's customers switching to a cheaper competitor, consistent with the customer focussed theme of price stickiness for increases. These practices and the fact that retail companies do not drive customer relationships through implicit contracts with individual customers indicate that they do so through their perception by their potential customers as a group.

**Table 17: Comparison of ranking of importance of reasons to not increase prices across studies**

REASONS TO NOT INCREASE PRICE	Retail South Africa	UK	Canada	Romania	Euro
	Ranking				
Risk That Competitors Don't Change Prices	2	2	5	5	4
Readjust Own Prices	4	5	7	4	5
Explicit Contracts	8	1	3	2	2
Implicit Contracts	5	4	6	1	1
Threshold price	1	7	N/A	N/A	8
Menu Costs	7	8	8	7	7
Variable Costs don't change	6	6	1	N/A	3
Antagonise customers	3	3	2	N/A	N/A

Sources: (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010; Fabiani, et al., 2006)

Table 17 above shows a comparison across various price setting studies, of the reasons for firms not increasing. The first striking difference between the retail sector in South Africa and the other studies is the complete difference in the perception of the importance of explicit contracts. This is due to all other studies being across sectors, where manufacturing firms for example would have high numbers of contracts customers, whereas retail businesses typically have no long term contracts with customers.

The second major difference between this study and other studies is the high importance of threshold pricing, which is a predominantly retail practice, and is not as effective in other sectors. When ignoring explicit contracts from the other studies (given its inapplicability to

retail) there are strong themes of the maintenance of customer relationships and the avoidance of coordination failure as the dominant reasons for not increasing prices.

When asked to rate the importance of factors in firms not decreasing their prices, the factors with the highest levels of importance were maintenance of threshold pricing, avoiding antagonising customers and the risk of subsequently increasing prices. All three of these practices are customer focussed in nature; threshold pricing drives sales at the optimum profit margin, while the other two practices maintain customer relationships.

**Table 18: Comparison of ranking of importance of reasons to not reduce prices across studies**

REASONS TO NOT REDUCE PRICE	Retail South Africa	UK	Canada	Romania	Euro
	Ranking				
Risk Competitors Change prices	4	2	5	5	4
Readjust Own Prices	2	5	7	4	5
Explicit	8	1	3	2	2
Implicit	5	3	6	1	1
Threshold	1	7	N/A	N/A	8
Menu Costs	6	8	8	7	7
Variable costs Don't change	7	6	1	N/A	3
Antagonise Customers	3	4	2	N/A	N/A

Sources: (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010; Fabiani, et al., 2006)

Table 18 demonstrates the comparison of the ranking of importance of various reasons to not reduce prices from various different studies. The data is consistent with the reasons for not increasing price in that explicit costs are the least important factor for retail firms in South Africa due to the lack of explicit contracts in the retail sector. The same effect occurs, though to a lesser degree with implicit contracts, as large retailers do not have relationships with individual customers.

If implicit and explicit contracts are ignored each study has at least 1 overlap in their top 3 practices with readjusting their own prices or avoiding antagonising customers,

maintaining the themes of customer focus and avoidance of coordination failure. These reasons are consistent with the results of Table 5 showing the importance of factors of competitiveness, where long term relationships with customers had the highest “Very Important” frequency, followed closely by a firms’ quality of its products and its prices.

In summary proposition 3 is confirmed as surveyed firms in the South African retail sector were found to be price sticky, confirmed by a Chi squared test. The stickiness is consistent with respect to not decreasing as well as not increasing prices, in that the dominant reason for doing so is to maintain a positive relationship with customers. Maintaining threshold prices and avoiding antagonising customers were the dominant drivers of stickiness as a whole.

#### **6.6 Research Proposition 4: The largest cause of retail price increases is an increase in input cost and a decrease in competitor prices is the largest cause of retail price decreases**

The results of the respondents of the surveys of this study are consistent with theoretical literature in that there are asymmetries that exist between price increases and price decreases. This is also consistent with previous studies in UK, Romania and the wholesale and retail sector within the Canadian study (Greenslade & Parker, 2010; Copaciu et al., 2010; Amirault et al., 2006).

As shown in Table 11 in Chapter 5, when firms were directly asked what the importance of various reasons for price increases were an increase in input costs was the reason with the highest mean, at 2.6. Input costs had the highest frequency of “Very Important” scores of 36.7, and had 63.3% of the sample between “Very Important” and “Fairly Important”. Input costs also had the lowest frequency of responses between “N/A” and “Not Important”. The importance of input costs is consistent with the results shown in Table 6 above, showing the applicability of various theories for price stickiness, where the statement “prices don’t change until costs change” had the highest applicability.

Table 19 below displays a comparison between the South African retail sector and previous studies in UK, Canada and Romania. As can be seen below, retail in South Africa

was consistent with Romania and UK in that input costs were the main driver for price increases, whereas Canada was driven by competitor prices. South Africa appeared to list demand rises and competitor pricing as more important than labour costs, whereas Romania and the UK had labour costs as the second highest reason for price increases. This is likely due to a combination of South African retail's high industry concentration and relatively low cost of labour versus developed countries where labour costs are higher.

**Table 19: Comparison of ranking of importance of reasons for price increases**

Reasons For Price Increases	Retail South Africa	Romania	UK	Canada
	RANKING			
Labour Costs increase	4	2	2	4
Input Costs increase	1	1	1	2
Finance Costs increase	5	5	5	5
Actual Rise in Demand	2	3	3	3
Actual Price increase by domestic rivals	3	3	4	1

Sources: (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010; Fabiani, et al., 2006)

Table 12 in Chapter 5 indicated the results of firms being asked to rank the importance of reasons for price decreases in the South African retail sector. A price reduction by local rivals had the highest mean and the highest "Very Important" frequency, ranking it as the most important reason for price decreases in the South African retail sector.

The findings from South African retail are similar to those of Romania, UK and Canada, shown in Table 20 below, in that Romania (joint highest with input cost decreases) and Canada had domestic rival price decreases as their highest ranked reason, while the UK had it as second. Retail South Africa had a decline in demand as the second highest ranked reason while Romania, UK and Canada all had it in their top three ranked reasons for decreases.

**Table 20: Comparison of ranking of importance of reasons for price decreases**

Reasons For Price Decreases	Retail South Africa	Romania	UK	Canada
	RANKING			
Labour Costs decrease	5	4	4	4
Input Costs decrease	3	1	3	2
Finance Costs decrease	4	5	5	5
Actual Decline in Demand	2	3	1	3
Actual Price decrease by domestic rivals	1	1	2	1

Sources: (Greenslade & Parker, 2010; Amirault et al., 2006; Copaciu et al., 2010; Fabiani, et al., 2006)

These rankings are of importance for understanding the reasons for price increases and price decreases in the South African retail sector. The findings are conceptually consistent with the results found for proposition 1. When analysing Table 12 above, which demonstrates the importance of pricing frameworks, it is evident that the most important frameworks are mark-up pricing, and competitor pricing, which collaborate with the most important reasons for price increases and price decreases respectively.

## 7 CONCLUSIONS

### 7.1 Introduction

The purpose of Chapter 7 is to review the research objectives of this study and connect them to a summary of the findings from the surveys that have already been conducted. The chapter provides insights into the price-setting behaviour of retail firms in South Africa, and provides a discussion of opportunities for further research in the area.

### 7.2 Review of Research Objectives

The purpose of this study as a whole was to better understand the price setting behaviour of firms in the retail sector in South Africa. The study also compares the results from the South African retail sector to various other previous studies regarding price setting behaviour.

Specifically, the study focussed on answering the following questions:

- What is the dominant pricing framework in the South African retail sector?
- Are price reviews and price changes in the South African retail sector at regular intervals or due to specific events?
- Is there a lag between when firms experience demand or costs shocks, and when they respond to those shocks by changing price?
- What are the factors that are the largest causes of retail price increases and retail price decreases?

### 7.3 Research Findings

When considering the pricing frameworks followed by the respondent firms, the results demonstrated that the dominant pricing framework was mark-up pricing. The second most important pricing framework was found to be competitor based pricing. This was consistent with theory expounded by Kotler and Keller (2009), as well as the study by Fabiani et al. (2006), where 56% of firms followed mark-up pricing.

The results of the study showed that the majority of South African retail firms (83.3% of respondents) surveyed for this study review their prices at regular intervals. This is indicative of a strong preference for time dependant reviews as opposed to state dependency.

The results also showed that the 60% of the firms that took part in the survey change their prices at regular intervals, while 36.7% did so due to specific events, and 3.3% used a combination of the two concepts. This confirms that price changes, like price reviews, are done on a time dependent basis.

When considering the information set used by firms in their price-setting process, 76.7% of firms were found to use current trading conditions to make their decisions, with 23.3% of firms collectively using rule of thumb, past or future information. The information sets are relatively current, with 86.6% of firms having information less than 1 week old, within which 33.3% of the sample have real time information.

The results confirmed asymmetry in the importance of causes of price changes, depending on whether changes are increases or decreases. They showed that the principal cause of price increases in the South African retail sector was an increase in input costs, while the leading cause of price decreases was an actual reduction in prices by firms' domestic rivals. These results are consistent with both the UK and Euro zone studies (Greenslade & Parker, 2010; Fabiani, et al., 2006).

## **7.4 Recommendations for Future Research**

Due to the time constraints of this study, as well as the fact that a single researcher was used, the study is specific to the retail sector, and was capped at 30 respondents. A much larger study into the retail sector where the sample size would be large enough for stratification would be useful and would allow for greater use of inferential statistics, although this would require significantly more time and more researchers.

There is an opportunity to complete similar studies to the current study on other sectors to understand the relative stickiness of different sectors, as sectors differ in their use of price discrimination, and the degrees and nature of competition. This would be useful in



understanding how monetary policy would pass through them individually, and this would allow targeted approaches by policy makers.

A second area for future research would be a price setting study for the South African economy as a whole across all sectors. This would be useful in understanding the stickiness of the general economy.

## **7.5 Conclusion**

There has been growing recognition that a survey approach to understanding price setting offers insights into the behaviour of those setting prices that a micro data approach cannot offer. This study was completed in order to gain behavioural insights into the retail sector of South Africa, specifically due to the high market concentration, and nature of competition.

The majority of price setting studies have been conducted in developed economies, as opposed to developing ones. Despite this, as well as the high market competition discussed above, the results from the South African retail sector study were more similar than not to previous studies. All four research propositions were based on previous studies in other contexts and all four were confirmed.

The results of this study have fulfilled the objectives explained for the study in chapter 1, and will be useful for stakeholders in the South African retail sector. The study provides insights for policy makers trying to affect the South African retail sector through monetary policy. The study also provides competitive insights for firms that are participating within the sector, and can act as a benchmarking facility for firms to assess their own pricing practices.

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## APPENDIX A: PRICE SETTING SURVEY

We are conducting a study on the current price setting practices of South African companies. The objective of this study is to test some of the economic theories on price setting behaviours and to identify possible new trends in how prices are set.

The survey is divided into three sections.

Section A deals with general information about your company and its main products and services.

Section B gathers information on pricing behaviour and factors influencing pricing decisions.

Section C addresses factors that may lead to delays in price adjustments.

### Confidentiality Agreement

Your participation is voluntary and you may withdraw at any time. All information provided by you will be kept confidential and analysed at an aggregated level.

If you have any concerns or questions please contact me or my supervisor, our details are as follows:

	Researcher 1	Researcher 2	Researcher 3	Supervisor
<b>Name</b>	Rashin Maharaj			Mike Holland
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<b>Contact Number</b>	0723498506			082 495 1283

## **EXPLANATION OF SOME IMPORTANT CONCEPTS**

### **Representative Business Line**

Since it is likely that your company sells many different types of goods and services, it will be difficult to generalize questions based on each. For this reason, we would like you to consider one of your main business lines when answering these questions.

Furthermore, if your company sells in both the domestic and international market, please answer all questions with specific reference to the South African markets.

### **Firm or Company**

If your firm is a holding company of two or more different types of business, choose the business type that accounts for the largest portion of revenues or for which you feel most comfortable answering questions.

### **Price**

By price we mean the actual transaction sales price, not the list price. Therefore, if discounts from the list price are common in your industry, refer to the after-discount price of your good or service. If you have different prices for different types of customers, base your answer on the most common type of customer.

### **Surveying Different Types of Firms**

The survey is designed to be answered by companies of many sizes in the manufacturing sector of the economy. If you are unable to answer a question, please provide as much information as possible.

### **Fixed and Variable Costs**

Fixed costs remain constant regardless of the volume of production, while variable costs fluctuate with production levels.

Date (Survey collected) \_\_\_\_\_

## Section A: General Information

### COMPANY INFORMATION

A1. Company name \_\_\_\_\_ Phone number \_\_\_\_\_

A2. Contact name \_\_\_\_\_ Title \_\_\_\_\_

A3. What is your company's main product or service? \_\_\_\_\_

A4. What would you say is the approximate market share of your company's main product or service in South Africa as mentioned in question A3 above?

< 5%

5% to 10%

11% to 20%

21% to 30%

31% to 40%

41% to 50%

> 50%

Don't Know

A5. How many types of products does your company currently sell in South Africa?

1 to 5

6 to 10

11 to 15

16 to 20

more than 20

A6. How many staff is currently employed by your company in South Africa? (Permanent and temporary) \_\_\_\_\_

A7. What was the approximate size was your company's turnover in the past financial year?

< R1m

R1m to <R5m

R5m to R10m

R10m to R50m

> R50m



A8. What proportion of your sales of your main product is sold outside South Africa?

- |                                     |                                     |                                     |
|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> 0%         | <input type="checkbox"/> >0% to 10% | <input type="checkbox"/> 11% to 20% |
| <input type="checkbox"/> 21% to 30% | <input type="checkbox"/> 31% to 40% | <input type="checkbox"/> 41% to 50% |
| <input type="checkbox"/> > 50%      | <input type="checkbox"/> Don't Know |                                     |

A9. What is the main destination of your sales? (choose only one option)

- |   |  |
|---|--|
| <input type="checkbox"/> Retailers/wholesalers    | <input type="checkbox"/> Other private companies |
| <input type="checkbox"/> Public sector/government | <input type="checkbox"/> Directly to consumers   |

A10. If you have indicated retailers/wholesalers or other private sector companies in question A9 above, are these companies within your group of companies?

- |                              |                             |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

#### PRICE FLEXIBILITY

A11. What constraints do you currently face with regards to the prices you set?

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> No constraint _____      | <input type="checkbox"/> Legal/Regulatory _____ | <input type="checkbox"/> Common International Price |
| <input type="checkbox"/> Parent Company Directive |   |   |



A18. Different factors can determine your competitiveness. What is the importance in your company of the factors listed below?

Factor	Very Important (4)	Fairly Important (3)	Slightly Important (2)	Not Important (1)	Not Applicable (0)
The price of your product					
The quality of your product.					
The degree to which your product can be distinguished from that of your competitors.					
Delivery period					
Long-term relationship with customers					
The after sales service					
Other factors (please specify)					

#### COST TRENDS

A19. Approximately what percentage of your main product or service costs is variable \_\_\_\_\_% versus fixed \_\_\_\_\_%?

### SALES DISTRIBUTION

A20. Which of the following best describes your company's largest share of turnover generated?

From contract customers

From non-contract customers

equal share from both contract and non-contract customers

A21. Approximately what percentage of the sales of your main product or service goes to your five largest buyers, **today**?

<10%

11-25%

26-50%

>50%

A22. What was the approximate sale percentage to the five largest buyers of your main product **a decade ago**?

<10%

11-25%

26-50%

>50%

### GENERAL PRICING

A23. Do you have publicly available price lists or posted prices available to your customers?

Yes

No

Don't know

**If you have answered yes to question A23, then answer the following question, otherwise move to question A25**

A24. How are these prices lists communicated to your customers?

Email

Post

Website

Other, please specify \_\_\_\_\_

A25. Do your transaction/invoice prices differ from your list prices (i.e. discounted)?

- Yes                       No                       Don't know

A26. The price charged for your company's main product or service is (choose only one option)

- The same for all customers irrespective of quantities sold.  
 Depends on the quantity sold (but accordingly to a standard price list)  
 Decided case by case

A27. At what level can the decision be made to discount / vary the transaction price from the list price?

- No deviation to the list price is allowed  
 Finance and senior management can approve deviations in extreme circumstances  
 Sales managers can approve price changes to facilitate business  
 Sales people have the flexibility to alter the transaction price as they see fit on a case by case basis.

## Section B: The pricing decision

Some companies often review their prices without necessarily changing/adjusting them afterwards.

### FREQUENCY OF PRICE REVIEWS

B1. How frequently do you review your SA selling prices?

- Daily  Weekly  Monthly  
 Quarterly  Half Yearly  Annually  
 Sporadically  In response to specific event (please specify)
- 

B2. If you answered “sporadically” or “in response to specific event”, how many times have pricing decisions been reviewed in the last 12 months? \_\_\_\_\_

### FREQUENCY OF PRICE CHANGES / ADJUSTMENTS

B3. How frequently do you change/adjust the price of your main product or service?

- Daily  Weekly  Monthly  
 Quarterly  Half Yearly  Annually  
 Sporadically  In response to specific event (please specify)
- 

B4. In the past 12 months how many times have you actually adjusted prices?  
\_\_\_\_\_

B5. To the best of your knowledge, has the frequency of price changes/adjustments changed in the **past decade**?

No, it has not changed frequently  
 Yes, we change prices less frequently  
remember

Yes, we change prices more frequently  
 Don't know / Can't remember

B6. If yes, why? \_\_\_\_\_

#### CONSIDERATIONS FOR PRICE SETTING

B7. Which of the following methods best describe how you set your prices? (choose only one option)

By a fixed amount or percentage linked to the current inflation rate.

We set the price primarily given conditions that have applied in the recent past

We set the price primarily in accordance with current trading conditions.

We set the price primarily based on our view of the near future.

B8. How are prices for your main product or service determined? Please rank each of the following statements by ticking the appropriate box on the right-hand side of each statement.

Determining Factors	Very Important (4)	Fairly Important (3)	Slightly Important (2)	Not Important (1)	Not Applicable (0)
Price is made up of direct (i.e. prime or variable) cost per unit plus a fixed percentage mark up					
Price is made up of direct (i.e. prime or variable) cost per unit as above, but the percentage of mark-up is not fixed.					
Price is primarily specified by your principal customer.					
Price is primarily specified by your competitors' price					
Price is primarily determined by a regulatory agency					
Price is set at a statutory level					
Price is based on targeted return on capital/assets.					
Price is primarily determined in other ways (please specify)					



B9. How important are the following factors listed below in terms of causing an **increase** in prices?

Factor	Very Important (4)	Fairly Important (3)	Slightly Important (2)	Not Important (1)	Not Applicable (0)
Not applicable – upward adjustment never takes place (go to Q. B11).					
Increase in cost of labour					
Increase in the price of fuel, raw materials or inputs / components.					
Increase in financing costs.					
Increases in fixed costs.					
Actual rise in demand.					
Expected rise in demand.					
Actual price increase by one or more of your domestic rivals.					
Expected price increase by one or more of your domestic rivals					
Actual price increase by one or more of your overseas rivals.					
Expected price increase by one or more of your overseas rivals					
Significant increase in market share					
Increase in costs arising from regulation					

B10. What other factor(s) not listed above motivate price increases?

B11. How important are the following factors listed below in terms of causing a **reduction** in prices?

Factors	Very Important (4)	Fairly Important (3)	Slightly Important (2)	Not Important (1)	Not Applicable (0)
Not applicable – downward adjustment never takes place (go to <b>Q. B13</b> ).					
Decrease in cost of labour					
Decrease in the price of fuel, raw materials or inputs / components.					
Decrease in financing costs.					
Actual decline in demand.					
Increase in productivity.					
Expected decline in demand.					
Actual price reduction by one or more of your domestic rivals.					
Expected price reduction by one or more of your domestic rivals					
Actual price reduction by one or more of your overseas rivals.					
Expected price reduction by one or more of your overseas rivals					
Significant reduction in market share					
Decrease in costs arising out of regulation					

B12. What other factor(s) not listed above motivate price reductions?

B13. What effect will the following have on your gross profit margins?

Market Condition	No effect on gross margins	Upward effect on gross margins	Downward effect on gross margins
A rise in market demand for your product			
A rise in domestic competitors' prices			
A rise in overseas competitors prices			

B14. How quickly does your company change prices in response to changes in demand and costs?

Statement	Less than 1 week	From 1 week to 1 month	From 1 month to 3 months	From 3 to 6 months	From 6 months to 1 year	More than 1 year	The price remains unchanged
After a significant increase in demand, how much time on average lapses before you raise your prices?							
After a significant increase in production costs, how much time on average elapses before you raise your prices?							
After a significant reduction in demand, how much time on average lapses before you reduce your prices?							
After a significant reduction in production costs, how much time on average elapses before you reduce your prices?							

**INFORMATION USED TO SET PRICES**

B15. How frequently is the main information your company uses to form your pricing decisions updated?

- Daily                                     Weekly                                     Monthly  
 Quarterly                                     Annually                                     Sporadically

B16. How current is the information at the time when you receive it?

- real time (no lag)                                     less than 1 day old                                     less than 1 week old  
 less than 1 month old                                     less than 1 quarter old                                     more than 1 quarter old.

**EXCHANGE RATES AND PRICES** *(the exchange rate refers to the Rand/U.S Dollar. exchange rate)*

B17. Do you import/export intermediate inputs or finished goods?

- Yes                                     No                                    ***If no, skip to Section C***

B18. Which statement best exemplifies the immediate impact of a rand exchange rate depreciation (the value of the rand decreases against other currencies) on your company's profit margin.

Statement	Tick if applicable
Significant negative effect	
Moderate negative effect	
No significant effect	
Moderate positive effect	
Significant positive effect	

B19. Within the context of margins becoming smaller as a result of a depreciating Rand, please rank the following in order of their importance as a means of restoring margins in recent years.

<i>Option</i>	<i>1= Most important and 6 = least important</i>
Increase selling prices	
Shift input to local supplier	
Reduce other input costs	
Increase productivity or volumes of activity	
Reduce other costs	
Other means of restoring margin_(specify)	

B20. On average, how often do you increase prices to adjust for an increase in input costs (that is to maintain profit margins) following the depreciation of the rand exchange rate?

- virtually never                       less than half the time                       about half the time  
 more than half the time                       virtually all the time                       Don't know

B21. How much does the exchange rate have to depreciate before you adjust prices?

- less than 5%                                       5% to 10%                                       10% to 20%  
 20% to 30%                                       more than 30%                                       not applicable/don't know

B22. Are costs associated with exchange rate changes more difficult to pass on to consumers now than a decade ago?

- Yes     No

If yes, why? (Choose all applicable)

Statement	Tick if applicable
Competition from domestic sources	
Competition from foreign sources	
Fewer buyers exert more power on our company to keep prices low	
The low inflation environment makes price increases more visible and more difficult to justify	
Other	

If other factors apply, please specify

---

B23. During significant exchange rate depreciation, do suppliers reduce their price to offset part of the higher import cost?

No

Yes, infrequently

Yes,

often  Yes, but I don't know how often.

## Section C: Factors leading to delays in price adjustments

This section deals with potential theories as to why price adjustments may be delayed, even though companies may want to increase or decrease their prices.

**Statement A: The information used to review (and ultimately change) prices are available infrequently. Therefore, prices may be slow to adjust to new conditions.**

C1. Does this statement apply to your company?

No                       Yes, slightly applicable                       Yes, very -applicable

*(If No, Skip to Statement B1)*

C2. Has information technology made this factor less relevant over the past 10 years?

Yes                       No

C3. Would your company change prices more quickly or more often if information was available more frequently?

Yes                       No

**Statement B1: Companies delay price reductions because they don't want to be the first in the industry to reduce prices.**

C4. Does this statement apply to your company?

No

Yes, slightly applicable

Yes, very applicable

*(If No, Skip to Statement B2)*

C5. Why does this statement apply to your company? *(Choose all applicable)*

Statement	Tick if applicable
Price reductions may trigger a price war	
If we reduce prices first, new business demand would exceed our capacity	
Lower prices reduce our margins	
We are concerned that the need for a price reduction may be temporary	
Other	

If other, please specify \_\_\_\_\_

\_\_\_\_\_



**Statement B2: Companies delay increasing prices because they don't want to be the first in the industry to increase prices.**

C6. Does this statement apply to your company?

No

Yes, slightly important

Yes, very important

*(If No, Skip to Statement C)*

C7. Why does the statement apply to your company? *(Choose all applicable)*

Statement	Tick if applicable
Cannot sell anything above competitors' prices	
We would lose too many customers/market share	
If a competitor increases prices first, customers are less upset with our company	
Other	

If other, please specify \_\_\_\_\_

\_\_\_\_\_

**Statement C: Prices depend mainly on the costs of labour and raw materials used in producing goods and services. Therefore, prices don't change until costs change.**

C8. Does this statement apply to your company?

No

Yes, slightly important

Yes, very important

*(If No, Skip to Statement D)*

C9. Are temporary cost increases more difficult to pass into prices than increases viewed as permanent?

Yes

No

C10. If you foresee an increase in your future costs (such as raw materials), do you *(Choose any of the following)*

Statement	Tick if applicable
Buy in advance and store in inventory	
Hedge against cost increases	
Increase own prices in anticipation	
Take no action	

C11. If you take no action, why? *(Choose all applicable)*

Statement	Tick if applicable
It would antagonize our customers	
We are not confident in our forecasts or estimates	
We are reluctant to take the lead in increasing prices.	
We can easily increase prices when actually required	
Take no action	

**Statement D: Companies would like to adjust prices more often to reflect market conditions, but fixed-price contracts make it difficult to pass on price increases when a contract is active.**

C12. Does this statement apply to your company?

No

Yes, slightly important

Yes, very important

*(If No, Skip to Statement E)*

C13. Do contracts prevent prices from decreasing when demand or costs fall?

Yes

No

C14. Do you offer discounts on posted contract prices?

Yes

No

C15. What is the average period of time over which prices are fixed in contracts?

\_\_\_\_\_

C16. Compared to 10 years ago, is this period generally?

longer

shorter or

the same

**Statement E: Companies delay price increases because they have an implied understanding with customers that they will not increase prices in depressed markets.**

C17. Does this statement apply to your company?

No

Yes, slightly important

Yes, very important

*(If No, Skip to Question C19)*

C18. Does the opposite hold true in strong markets (companies delay price decreases)?

Yes

No

C19. Please indicate how important each of these factors are as reasons to decide **NOT to increase** the price?

Factors	Very Important (4)	Fairly Important (3)	Slightly Important (2)	Not Important (1)	Not Applicable (0)
The risk is too high that our competitors do not change their prices.					
The risk is too high that we subsequently have to re-adjust our prices in the opposite direction.					
The existence of written contracts specifying that prices can only be changed when the contract is renegotiated.					
The existence of an implicit contract (regular contact with a customer without any written contract).					
The preference for maintaining prices at a certain threshold (e.g. you would rather charge R9.99 than R10.00).					
The costs implied by price changes (e.g. printing of price lists or information gathering costs).					
The variable costs in our company do not change by much with market conditions, making our price quite stable.					
It would antagonise our customers					
Other (please specify)					

C20. Please indicate how important each of these factors are as reasons to decide **NOT** to **reduce** the price?

Factors	Very Important (4)	Fairly Important (3)	Slightly Important (2)	Not Important (1)	Not Applicable (0)
The risk is too high that our competitors do not change their prices.					
The risk is too high that we subsequently have to re-adjust our prices in the opposite direction.					
The existence of written contracts specifying that prices can only be changed when the contract is renegotiated.					
The existence of an implicit contract (regular contact with a customer without any written contract).					
The preference for maintaining prices at a certain threshold (e.g. you would rather charge R9.99 than R10.00).					
The costs implied by price changes (e.g. printing of prices lists or information gathering costs).					
The variable costs in our company do not change by much with market conditions, making our price quite stable.					
It would antagonise our customers					
Other (please specify)					

**FINAL COMMENTS**

C21. Are there any other compelling arguments as to why prices adjust slowly? *(Choose all applicable)*

Statement	Tick if applicable
It would be too costly to change prices more often (time, effort, out-of-pocket costs).	
Factors influencing prices do not change often enough to warrant changes.	
Prices could not change more often without disturbing customer relations.	
We are more likely to amend product characteristics (e.g. warranty, delivery lag) than prices.	
Low inflation makes large price changes more noticeable.	
Other	

*If other please specify,*

---

C22. To what extent do your responses regarding your main product or service also represent your other product lines?

Mostly representative

Not representative

Not applicable, company has only one product.

Thank you for your participation in this survey.

## APPENDIX B: PRICE SETTING SURVEY RESULTS

**B1 You have indicated retailers/wholesalers or other private sector companies in the previous question, are these companies within your group of companies? (Those that**

Answer Options	Response Percent
Yes	50.0%
No	50.0%

**B2 What constraints do you currently face with regards to the prices you set?**

Answer Options	Response Percent
No constraint	46.7%
Legal/Regulatory	20.0%
Common International Price	26.7%
Parent Company Directive	13.3%

**B3 How intense is the competition you experience for your main product or service?**

Answer Options	Response Percent
Strong	86.7%
Weak	13.3%
None	0.0%
Don't know	0.0%



**B4 Approximately what percentage of your main product or service costs is variable versus fixed?**

Number	Variable Costs %	Fixed Costs %
1	40	60
2	75	25
3	0	0
4	20	70
5	40	60
6	60	40
7	35	65
8	90	10
9	40	60
10	65	35
11	75	25
12	77	23
13	30	70
14	100	
15	20	80
16	60	40
17	80	20
18	20	80
19	30	70
20	30	70
21	30	70
22	100	0
23	10	45
24		100
25	40	60
26	10	90

**B5 Which of the following best describes your company's largest share of turnover generated?**

Answer Options	Response Percent
From contract customers	30.8%
From non-contract customers	50.0%
Equal share from both contract and non-contract customers	19.2%

**B6 Approximately what percentage of the sales of your main product or service goes to your five largest buyers, today?**

Answer Options	Response Percent
<10%	40.7%
11-25%	29.6%
26-50%	14.8%
>50%	14.8%

**B7 What was the approximate sale percentage to the five largest buyers of your main product a decade ago?**

Answer Options	Response Percent
<10%	40.0%
11-25%	36.0%
26-50%	8.0%
>50%	16.0%

**B8 Do you have publicly available price lists or posted prices available to your customers?**

Answer Options	Response Percent
Yes	57.1%
No	42.9%
Don't know	0.0%

**B9 You have answered yes to the previous question. How are these prices lists communicated to your customers?**

Answer Options	Response Percent
Email	69.2%
Post	30.8%
Website	61.5%

**B10 You have answered yes to the previous question. How are these prices lists communicated to your customers?**

Number	Other (please specify)
1	leaflets
2	On shelf
3	Pricelist
4	ON THE MIB (Main Id Board)
5	Mobi site
6	Price stickers on products in store
7	Weekly Leaflets

**B11 Do your transaction/invoice prices differ from your list prices (i.e. discounted)?**

Answer Options	Response Percent
Yes	50.0%
No	46.4%
Don't know	3.6%

**B12 The price charged for your company's main product or service is?**

Answer Options	Response Percent
The same for all customers irrespective of quantities sold.	46.4%
Depends on the quantity sold (but accordingly to a standard price list)	25.0%
Decided case by case	28.6%

**B13 At what level can the decision be made to discount / vary the transaction price from the list price?**

Answer Options	Response Percent
No deviation to the list price is allowed	32.1%
Finance and senior management can approve deviations in extreme circumstances	39.3%
Sales managers can approve price changes to facilitate business	32.1%
Sales people have the flexibility to alter the transaction price as they see fit on a case by case basis	21.4%

B14 Number	What are the reasons for changing prices in response to specific events (please specify)
1	cant say
2	Monthly from Petroleum for Annualy - Margin by Category. Price is automatically adjusted based on cost.
3	when costs go up substantially
4	Competitors prices, can result in new lower prices in connection with import cost prices can be adjusted or with renewed contracts
5	After doing random market studies on what competitors are selling theres products at.
6	
7	In response to supplier price changes and our marketing activities

B15 To the best of your knowledge, has the frequency of price changes/adjustments changed in the past decade?	
Answer Options	Response Percent
No, it has not changed	14.3%
Yes, we change prices more frequently	57.1%
Yes, we change prices less frequently	14.3%
Don't know / Can't remember	14.3%

**B16 You mentioned yes in the previous question, why has it changed in the past decade?**

Number	Response Text
1	more new models, so old model prices decrease
2	customers do not react well to frequent changes Competition has increased so we need to be the best priced or else our
3	sales will decline.
4	Market for import has changed
5	Transport Costs the market is getting more sophisticated in responding to price changes in
6	the market
7	COMPETITIVE MARKET AND INCREASE IN IMPORT DUTY TAX
8	depends on the base oil and additive prices
9	costs have gone up more notably
10	competitive and manufacturing cost increase
11	Supplier and Retailer strategies, fierce competition and promotions
12	Regulation
13	Inflation, competition etc
14	Economic Market Downfalls and Frequent ROE changes
15	More competition from Chinese markets
16	rand dollar volatility Instead of having set periods to markdown stock, we markdown more frequently if stock is not selling so we can turn it quicker in the season that it
17	sells. more irregular exchange currency and more competition hence more
18	marketing activities
19	More competition, consumers more price-sensitive
20	More competitive in certain trade areas

**B17 What other factor(s) not listed in the above question, motivate price increases?**

Number	Response Text
1	forex
2	None
3	Volatility of the rand versus major Currencies
4	Weakening exchange rate

**B18 What other factor(s) not listed in the above question, motivate price reductions?**

Number	Response Text
1	new models
2	strengthening exchange rate
3	bulk buy with more discount from supplier

**B19 What effect will the following have on your gross profit margins?**

Answer Options	No effect on gross margins	Upward effect on gross margins	Downward effect on gross margins
A rise in market demand for your product	21%	79%	0%
A rise in domestic competitors' prices	33%	54%	13%
A rise in overseas competitors prices	67%	25%	8%

**B20 How quickly does your company change prices in response to changes in demand and costs?**

Answer Options	Less than 1 week (%)	From 1 week to 1 month (%)	From 1 month to 3 months (%)	From 3 to 6 months (%)	From 6 months to 1 year (%)	More than 1 year (%)	The price remains unchanged (%)
After a significant increase in demand, how much time on average lapses before you raise your prices?	16	24	16	16	8	4	16
After a significant increase in production costs, how much time on average elapses before you raise your prices?	16	28	20	4	20	0	8
After a significant reduction in demand, how much time on average lapses before you reduce your prices?	16	32	20	8	12	0	8
After a significant reduction in production costs, how much time on average elapses before you reduce your prices?	12	16	28	8	8	4	16

**B21 Which statement best exemplifies the immediate impact of a rand exchange rate depreciation (the value of the rand decreases against other currencies) on your company's profit margin.**

Answer Options	Response Percent
Significant negative effect	52.9%
Moderate negative effect	41.2%
No significant effect	0.0%
Moderate positive effect	0.0%
Significant positive effect	5.9%

**B22 You mentioned exchange rate changes are more difficult to pass on than a year ago, why is that? If you mentioned No in the question above, then select "Not Applicable" below!**

Answer Options	Response Percent
Competition from domestic sources	30.8%
Competition from foreign sources	46.2%
Fewer buyers exert more power on our company to keep prices low	0.0%
The low inflation environment makes price increases more visible and more difficult to justify	46.2%
Not Applicable	15.4%
Other Factors (please specify)	0.0%

**B23 Statement A: The information used to review (and ultimately change) prices are available infrequently. Therefore, prices may be slow to adjust to new conditions. Does this statement apply to your company?**

Answer Options	Response Percent
No	61.5%
Yes, slightly applicable	30.8%
Yes, very applicable	7.7%

**B24 Has information technology made this factor less relevant over the past 10 years? (Follow up to statement A - 1/3 response rate)**

Answer Options	Response Percent
Yes	30.0%
No	70.0%

**B25 Would your company change prices more quickly or more often if information was available more frequently? (Follow up to Statement A - 1/3 response rate)**

Answer Options	Response Percent
Yes	60.0%
No	40.0%

**B26 Statement B1: Companies delay price reductions because they don't want to be the first in the industry to reduce prices. Does this statement apply to your company?**

Answer Options	Response Percent
No	65.4%
Yes, slightly applicable	23.1%
Yes, very applicable	11.5%

**B27 Why does this statement apply to your company?**

Answer Options	Response Percent
Price reductions may trigger a price war	44.4%
If we reduce prices first, new business demand would exceed our capacity	11.1%
Lower prices reduce our margins	77.8%
We are concerned that the need for a price reduction may be temporary	22.2%

**B28 Statement B2: Companies delay increasing prices because they don't want to be the first in the industry to increase prices. Does this statement apply to your company?**

Answer Options	Response Percent
No	42.3%
Yes, slightly important	34.6%
Yes, very important	23.1%

**B29 Why does the statement apply to your company? (Choose all applicable)**

Answer Options	Response Percent
Cannot sell anything above competitors' prices	40.0%
We would lose too many customers/market share	60.0%
If a competitor increases prices first, customers are less upset with our company	60.0%



**B30 Statement C: Prices depend mainly on the costs of labour and raw materials used in producing goods and services. Therefore, prices don't change until costs change. Does this statement apply to your company?**

Answer Options	Response Percent
No	46.2%
Yes, slightly important	23.1%
Yes, very important	30.8%

**B31 Are temporary cost increases more difficult to pass into prices than increases viewed as permanent?**

Answer Options	Response Percent
Yes	100.0%
No	0.0%

**B32 If you foresee an increase in your future costs (such as raw materials), do you**

Answer Options	Response Percent
Buy in advance and store in inventory	57.1%
Hedge against cost increases	35.7%
Increase own prices in anticipation	28.6%
Take no action	7.1%

**B33 Statement D: Companies would like to adjust prices more often to reflect market conditions, but fixed-price contracts make it difficult to pass on price increases when a contract is active. Does this statement apply to your company?**

Answer Options	Response Percent
No	73.1%
Yes, slightly important	19.2%
Yes, very important	7.7%

**B34 Do you offer discounts on posted contract prices? (Follows Statement D)**

Answer Options	Response Percent
Yes	28.6%
No	71.4%

**B35 Statement E: Companies delay price increases because they have an implied understanding with customers that they will not increase prices in depressed markets. Does this statement apply to your company?**

Answer Options	Response Percent
No	38.5%
Yes, slightly important	42.3%
Yes, very important	19.2%

**B36 Does the opposite hold true in strong markets (companies delay price decreases)? (Follows Statement E)**

Answer Options	Response Percent
Yes	62.5%
No	37.5%

**B37 To what extent do your responses regarding your main product or service also represent your other product lines?**

Answer Options	Response Percent
Mostly representative	76.0%
Not representative	12.0%
Not applicable, company has only one product.	12.0%

## COPYRIGHT DECLARATION

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<b>Confidentiality / Embargo</b>			
Do you need to have your report embargoed? If so, write a letter of motivation to substantiate (please attach letter to this form). Without a letter this will not be granted.			
Yes		No	X
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