Dear John, Terry, Patricia

Thank you for providing the opportunity to contribute to your review into the Victorian retail energy market.

The retail energy market is typically the forgotten end of the energy supply chain. This is despite the reality that for most customers, this is the only part of the supply chain with which they directly and routinely interact.

My submission consists of two papers.

Paper 1:  *Do discount wars benefit retail energy customers? Don’t bet on it*

and

Paper 2:  *An economic view of price discounting in the retail energy market*

The first paper presents the core arguments of my submission and I expect it will be the paper that will be of most interest to your review. The second paper provides supporting analysis.

The papers are long and they cover a great deal of territory but if I were to summarise the main findings and themes, they would be these:

- contracts in the retail energy market now represent a bundling of an energy purchase with a gambling product
- competition usually pits supplier against supplier to the benefit of customers. Gambling products pit suppliers against customers. Unlike in other goods and services markets, one side must lose in order for the other side to win. This cannot be an efficient outcome
- energy customers seeking lower prices are now forced to accept ‘bets’ where the costs of losing are getting bigger each year while the odds of ‘winning’ are getting longer
- such products have emerged because energy customers cannot opt out of this market for an essential services. This distorts the competitive discipline operating on energy retailers
- regulators who are responsible for “promoting the long term interests of the consumers” cannot remain impartial in the contest that has emerged between energy retailers and their customers. Regulators must intervene on behalf of consumers
The models developed in the paper an also be used to analyse the data published in the Victorian Energy Market Report 2015-16 published by the Essential Services Commission. Doing so suggests that by 2015-16, less than 30 per cent of household energy customers may have been benefiting from discount prices. It also suggests that for every year customers receive a discounted price they typically pay undiscounted prices for another 3 years.

Many of the findings discussed in the papers are counterintuitive. The conventional view suggests the very large discounts now offered by retailers are a sign that the market is fiercely competitive and that no further regulatory intervention is required. I disagree. This submission argues that these very large discounts are not genuine. They represent a misalignment of retailers’ and customers’ interests and therefore cannot be in the long term interests of consumers. Nevertheless, the paper cautions against activating the ‘nuclear option’ of price re-regulation too hastily.

Instead, I offer five measures that I believe will help realign the actions of retailers with the interests of consumers. These measures are explained in section 6 of the first paper, Do discount wars benefit retail energy customers? Don’t bet on it

That paper concludes with the ominous observation:

“While it is not yet time to exercise the ‘nuclear option’ of price re-regulation (in whatever form it might take) it is time to deploy all the remaining ammunition in the regulatory armoury for ensuring the actions of retailers are properly aligned with the interests of customers. Such alignment is the intended purpose of the five actions described [in the paper]. If these actions (and possibly others) are tried and found to fail, then the nuclear doomsday clock should be allowed to tick forward and strike midnight.”

I wish you well with your Review and I would welcome the opportunity to meet with you to discuss the ideas presented in the attached papers.

Yours sincerely

Dr Ron Ben-David
# Email or Hardcopy Submission Coversheet

Please print and complete this Email or Hardcopy Submission Coversheet, which includes the mandatory Privacy Collection Statement.

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If you wish to make a hardcopy submission, please post your submission along with the ‘Email or Hardcopy Submission Coversheet’ to:
Review of Electricity and Gas Retail Markets
Department of Environment, Land, Water & Planning
PO Box 500
Melbourne VIC 8002

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Do discount wars benefit retail energy customers? Don’t bet on it

Dr Ron Ben-David

28 February 2017

Submission to: Review of electricity and gas retail markets in Victoria
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ABSTRACT

This paper challenges two strongly held tenets about the competitiveness of the retail energy market. First, that the vigorous discounting between retailers is the product of, and evidence of, a strongly competitive retail energy market. And second, that the high switching rates observed in the Victorian retail energy market are evidence of, and driving cause of, strong competition in that market. The modelling and findings described in this paper and in an accompanying paper, *An economic view of price discounting in the retail energy market*, suggests the exact opposite may be true, namely: (1) vigorous discounting is the product of a discount war that is only possible because competitive discipline is not effective; and (2) heavy discounting is only possible if customer switching rates are ineffective at disciplining retailers’ pricing strategies.

Discount wars may appear to pit retailer against retailer to the benefit of customers, but this paper shows the effect of a discount war in the retail energy market is to pit retailers against their customers. Given the resources available to retailers and customers, respectively, it is unlikely too many customers will prevail in this contest.

Discount wars between retailers represent the latest arms race to befall the retail energy market. This paper demonstrates that the latest weapon to be deployed by energy retailers in this arms race are contracts which combine an energy purchase with a gambling product. Customers gamble they can keep their discounts for as long as possible, while retailers are gambling they can stop them from doing so. The analysis below suggests that customers seeking lower prices are now forced to accept ‘bets’ where the costs of losing are getting bigger — and the odds of ‘winning’ are getting longer.

Indeed, we estimate that in 2015-16 fewer than 30 per cent of household electricity customers may have been benefiting from discounted price offers.

The paper argues that regulators are not mere bystanders. They have played a central role in framing the market in such a way that encourages customers to purchase the gambling products being touted by retailers. Regulators, whose objective is to promote the long term interests of consumers, cannot stand on the sidelines of this contest between retailers and consumers. They must intervene on behalf of consumers to establish a level playing field. Five regulatory interventions are proposed.

Although the paper contends that price re-regulation represents the ‘nuclear option’ it nonetheless concludes that, “if these interventions are tried and found to fail then the time might have arrived to reach for the nuclear codes.”
Prologue

Could this happen at your supermarket?

Imagine approaching the self-service console at your local supermarket. You swipe the products in your basket across the scanner. The familiar beeping assures you that your purchases have been registered and all is in order. You swipe the last of your purchases and reach for screen to press the ‘pay now’ button.

Suddenly, the familiar image on the check-out screen dissolves and is replaced by what you quickly recognise to be an electronic slot machine. The screen repeatedly flashes its new message compelling you to Spin to Save, Spin to Save, Spin to Save.

The self-service screen now informs you that the supermarket is pleased to offer you access to its new Shopper Advantage Saver account.

“We can save you 35 per cent off every grocery bill. All you need to do is spin to save.”

It’s an appealing offer. It’s a big discount. You reach forward and press the play button.

The tumblers whirl in a blur of colour. You watch in eager anticipation of your savings. The first tumbler slows. It’s an ace. Then another ace appears. Your heart rate quickens. The third barrel slows, slows, slows…then…stops. You’re left staring at two aces and a lemon.

You’re disappointed is monetarily forgotten as the screen resumes its familiar appearance. Your transaction is completed and your account is debited. You shove your receipt in your pocket and take your groceries. As you load your bags into the car, the receipt falls to the ground. You reach down as something catches your eye. The receipt shows that your purchases came to a grand total of $104.72. That’s a bit pricier than you were expecting.

Your curiosity is piqued so you head back into the supermarket retracing your steps through the aisles. Smart phone in hand, you sum the price of each of your purchases on your calculator. You add the last of your items. The screen shows a grand total of $87.46. A little perplexed, you repeat the exercise and the screen again shows a total of $87.46.

Somewhat puzzled, you approach the service counter and question why you have just been debited $104.72. The assistant examines your receipt carefully before cheerily advising that everything seems to be in order. Your puzzled expression prompts a further explanation.

“Because you’re a valued customer and you purchased your groceries using our Shopper Advantage Saver account, you could have saved a whopping 35 per cent of this amount,” the attendant advises while pointing to the grand total on your receipt. “You would have only paid $68.07. That’s a huge saving. Maybe next time.”

You’re left staring at your receipt. Something just doesn’t seem right.
1. Introduction

In recent years, energy retailers have increased the discounts on offer to customers of electricity and gas to unprecedented levels. In Victoria, electricity discounts are now commonly as high as 30 to 35 per cent (either of the total bill or the usage component of the bill). This paper and an accompanying paper titled, *An economic view of price discounting in the retail energy market*, explore how such discounts are possible and what they imply about the strategies used by retailers to manage their portfolio of customer accounts. The papers also explore the implications for energy customers and the regulators of those markets.

The accompanying paper adopts various economic concepts to model and analyse the retail energy market. These concepts include: (i) a portfolio approach to modelling the contracts available in the retail energy market; (ii) expected utility theory to shed light on how energy customers might be expected to engage with the market; and (iii) prospect theory from behavioural economics to help explain why customers make the choices we observe and the role played by regulators in influencing those decisions. While the economics is not particularly complicated, it may not be readily accessible to readers who are not familiar with these concepts.

This paper therefore summarises the findings of the accompanying paper while avoiding economic terminology. It focuses on the implications of that analysis for retailers, customers and regulators.

The following section provides a very brief overview of the Victorian retail energy market, focussing on some of the major trends in that market since full retail competition was introduced in the early years of the new century. The section then turns to a discussion of the findings derived in the accompanying paper. These findings are not necessarily presented in the order in which they are derived in that paper.

Section 3 then examines the nature of the discounts currently on offer. Drawing on the tale presented in the prologue to this paper, the discussion demonstrates how the discounts now offered in the retail energy market are not discounts in the usual sense. Rather, retail energy contracts now embody a gambling product which pits the interests of retailers against the interests of customers. This misalignment of incentives is concerning. It does not reflect our expectations of a normal, healthy product market where the interests of suppliers and customers are aligned in pursuit of the common good.

Section 4 broadens the discussion to examine what these findings reveal about the state of competition in the retail energy market. The discussion suggests that the currently observable discount war represents an arms race between retailers in which the costs are passed through to customers. Because energy is an essential service, customers have no
option but to bear these costs. And because customers have no option but to bear these costs, there is little competitive discipline on retailers to avoid entering costly arms races. The discussion in this section also challenges the argument that discounting represents a form of price discrimination which sorts customers according to their willingness to pay.

The paper continues in section 5 by examining the case for regulatory reform of the retail energy market. The discussion disentangles symptoms from causes and identifies the most appropriate areas for regulatory reform in the causal chain.

Section 6 offers a five-point plan for realigning energy retailers’ interests with those of their customers. Ominously, the section concludes with the observation:

“While it is not yet time to exercise the ‘nuclear option’ of price re-regulation (in whatever form it might take), it is time to deploy all the remaining ammunition in the regulatory armoury for ensuring the actions of retailers are properly aligned with the interests of customers. Such alignment is the intended purpose of the five actions described above. If these actions (and possibly others) are tried and found to fail, then the nuclear doomsday clock should be allowed to tick forward and strike midnight.”

The paper concludes in section 7.
2. An alternative view of the Victorian retail energy market

This section initially provides an overview of the Victorian retail energy market, focusing on some of the trends that can be observed since pricing has been deregulated. This description is followed by the key findings of the accompanying paper, *An economic view of price discounting in the retail energy market*. These findings are not necessarily presented in the order in which they are derived in the accompanying paper. The remaining sub-sections describe and discuss the findings of the accompanying paper and their implications. The interested reader is referred to the accompanying paper for a more detailed account of how these findings are derived.

2.1 A quick overview of the Victorian retail energy market

Since the advent of full retail competition (FRC) in the Victorian energy market in the early 2000s, the number of retailers and offers available to customers has steadily increased. Prices were gradually deregulated and in January 2009 the final price controls were removed. Retailers are now fully responsible for determining the prices they make available to customers and customers are free to switch from one retailer to another at any time (though they may need to pay a small exit fee of up to $22). Regulators have performed their duties on the basis that competitive market disciplines ensure retailers’ offers are attractive and customers are provided with fair and reasonable prices.

In the broadest of terms, the retail energy market consists of two types of contracts. Standard Retail Contracts (or Standing Offers) preserve a suite of protections for customers who have never entered the competitive market. Traditionally, these contracts have been the highest priced offers published by retailers. By 2015-16, only 7.7 per cent of household customers remained on Standard Contracts for electricity and 10.6 per cent of gas customers. All other customers are on Market Retail Contracts (or Market Offers) which retailers offer in the market as they vie to attract and retain customers.

Some broad trends have been seen in retailers’ pricing strategies for their market contracts over the last few years. These include:

- *Size of discount.* Discounts continue to increase in size. In the early days of FRC, discounts were typically in single digits. A discount of 5 per cent was not unusual. By 2015-16, many retailers were offering discounts as high as 30 or 35 per cent.

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1 There are some particular circumstances where customers will be put on Standard Contracts, but these are very limited and only affect a negligible proportion of customers.
• **Conditionality of discounts.** The application of conditions to discounts is a relatively recent development. Few discounts are now available that don’t require customers to meet or agree to certain conditions — typically: paying their pay on time, arranging to pay by direct debit, or both. (More recently, retailers have been requiring paperless billing for eligibility to some discounts.)

• **Base price for discounting:** For many years after the commencement of FRC, a retailer’s market prices were offered at a discount to the price of the retailer’s standard contracts. More recently, the base against which a discount is measured has become less clear.

• **Length of contracts:** At the outset of FRC, it was quite usual for market contracts to be either 2 or 3 years in length. These days, many contracts are for only one year — though conversely, there are many more evergreen contracts (which continue until terminated by the customer).

As we shall see, all of these developments are significant and all are relevant for the pricing strategies pursued by energy retailers. Alongside these developments, some other market developments are worth noting.

• **Discounts are unrelated to anything.** While the number and variety of discounts available to customers has burgeoned over the last 15 years, the underlying products have remained completely unchanged and they do not vary with the price paid by customers. There is no relationship between discounts and the quality of the electrical current or the gas molecules being supplied. In other markets, discounts usually signify some change in an attribute of the product. For example, fashion stores will discount clothes that are no longer in season and food stores will discount products approaching their use by date.

• **Disproportionality of discounts.** Discounts in the retail energy market are typically conditional on customers paying on time and by direct debit. Clearly, these arrangements save the retailer operating and working capital costs, and those savings are used to offset the cost of the discounts to the retailer. But, as discounts have continued to grow, the revenue ‘sacrificed’ by the retailer can no longer bear any relationship to a retailer’s cost savings from customers meeting the conditions attached to their contracts.

• **Increased scope for error.** The increased number and variety of market offers means that customers can no longer rely on simple rules of thumb when choosing a market offer. Simply taking into account the headline discount is no longer a reliable guide to the ‘best’ offer. It may not even help customers judge a ‘good’ offer. Perhaps it is not surprising that the Victorian Government’s energy information website states that: “91 per cent of people who compare can save” and that “More than half of Victorian Energy Compare visitors could save $330 per year”.
Something doesn’t add up. The conventional wisdom holds that the retail component of an ‘average’ energy bill is around 12-15 per cent (the rest consisting of wholesale, network and government policy costs). From this amount, retailers must meet their own operating costs and their working capital requirements. The few cents that remain can be reinvested in the business or paid to shareholders. But if retailer profit is only a few cents from every dollar collected from customers, how can they be offering discounts as high as 30 or 35 per cent?

The analysis in the accompanying paper, An economic view of price discounting in the retail energy market, provides an economic context for these observable trends and characteristics in the retail energy market. The following section described the main findings from the accompanying paper.

2.2 Key findings from the accompanying paper

The key findings of the accompanying paper, An economic view of price discounting in the retail energy market, include:

- Market contracts are offering increasingly discounted offers, with some offers as high as 30-35 per cent. These discounts are generally conditional on the customer meeting certain requirements, most typically, paying on time and by direct debit. However, the base against which retailers’ discounts are applied is becoming less clear.

- Discounts at these levels exceed the entire retail component of a typical energy bill — usually cited at between 12-15 per cent.²

- The average discount in 2015-16 on generally available market offers for household electricity customer was 17.8 per cent and 12.9 per cent for gas customers. The average discount had increased since the previous year.

- In offering such large discounts, retailers are under increasing pressure to manage their portfolio of customer accounts. Aggressive discounts require aggressive portfolio strategies to shift customers off discounted prices during and at the end of their contracts.

- In 2015-16, as few as 28.9 per cent of household electricity customers and 42.5 per cent of household gas customers may have been benefiting from discounted offers.

- Higher conditional discounts leave customers exposed to significant bill shock. Failure to meet contract conditions could cost a typical customer many hundreds of dollars (per year).

² For example, AEMC (2016) notes (i) competitive market costs (which consist of wholesale costs and retail costs) account for 40-50 per cent of the total price (p.ii), and (ii) wholesale costs comprise 70 per cent of competitive market costs (p.iv). Together, these figures suggest that up to 12-15 per cent of the end price can be attributed to retail costs.
• There appears to have been a notable shift in retail price offers. Customers can now lower their energy bill only if they are prepared to ‘take a bet’ on whether they can maintain their market discounts.

• Traditional economic principles suggest that customers should aver from entering conditionally discounted market offers. That they do not do so, suggests that their decisions may be subject to overconfidence bias. Customer inertia explains why customers are unresponsive to the withdrawal of discounted prices.

• Regulators and retailers alike have ‘framed’ their messages around a view that discounted prices are ‘the norm’ and that customers who pay more than these discounted prices only do so because they fail to shop around. This framing of the market may be encouraging customers to ‘gamble’ on the retail energy market by entering conditionally discounted contracts, rather than accepting less risky offers.

• Conditionally discounted market contracts pit energy retailers and customers against each other. This is in contrast to the alignment of interests in other goods and services markets.

These findings and their implications are explored in the following sections.
2.3 A portfolio approach to modelling the retail energy market

It is quite common for regulators and other commentators, when assessing price trends in the retail energy market, to attempt to assess movements in particular contract types — most typically, they look at movements in:

1. the price of standard contacts. These contracts provide a convenient benchmark because all retailers are required to provide these contract and at least historically, they have provided the base price against which market contracts are discounted; and

2. the price of market contracts taking into account all applicable discounts. These prices are then compared to the price of standard contracts to assess the effectiveness of competition. That is, the difference in price between standard and market contracts is used to demonstrate the savings available to customers in the retail energy market.

With the recent emergence of discounts that appear to well exceed the claimed margins of retailers, the difference between the price of standard and heavily discounted market contracts has increased substantially. As we shall argue, this yawning gap is not a meaningful indicator of competitiveness in the retail energy market.

The accompanying paper, *An economic view of price discounting in the retail energy market*, develops a portfolio model of retail energy contracts. The model proceeds on the basis that retailers will hold a suite of discounted and undiscounted market contracts in their portfolio of customer accounts. Retailers will set a target rate of return for the portfolio rather than on individual customer accounts. Alternatively stated, we expect that the retail margin on any particular account is a less important determinant of price that the average margin earned across all accounts in a portfolio of market contracts.

(It is worth noting that the model does not attempt to solve what the retail margin ought to be, nor does it provide a mechanism for estimating the level of margins in the observable market. That analysis is left for others. As far as the model is concerned, these commercial parameters are determined elsewhere — namely, in retailers’ boardrooms following discussion with their shareholders and financiers. Instead, the model is focussed on understanding the role and impact of the discounting strategies pursued by retailers.)

Although the model is very simple it provides some profound insights.³

The model in the accompanying paper shows how retailers are faced with a limited number of options for how they manage their portfolio when they pursue higher and higher discounts to offer to prospective customers.

³ More complex models are discussed at different points in the accompanying paper. Although the mathematics quickly becomes very cumbersome in these more complex models, the insights they shed remain largely unchanged from the simpler model.
• Retailers can increase the price of their undiscounted market offers. In so doing, they make ‘room’ for the discount. We consider there are limitations on retailers pursuing such strategies. Neither customers nor regulators are likely to view such an approach as anything but a cynical manipulation of prices in order to artificially generate large discounts.

• Retailers could accept lower margins on their discounted market contracts provided the portfolio’s overall rate of return (or average margin) meets a retailer’s requirement. We expect that in practice retailers will be mindful of the margin made on individual contracts or classes of contracts as well as the overall rate of return. Most notably, retailers need to decide whether they are prepared to offer some discounted market contracts that make zero or negative margins, that is, whether they are prepared to be ‘loss leaders’.

• Retailers can decide the composition of their portfolios, that is, the mix of contracts with different associated discounts. The simple model we’ve developed assumes only two types of contracts in the portfolio: discounted and undiscounted. Some discussion is provided about how other contracts might be added to the portfolio.

Retailers therefore face some strategic decisions.

The model in the accompanying paper does not look at strategic decision making between retailers. (That would be an interesting exercise for later inquiry.) For now, it models the retail market as a single entity. For reasons discussed elsewhere, there are reasons to believe that in the energy market retailers generally move in the same direction rather than positioning themselves at different points in the market. At least as far as discounts are concerned, this appears to be true with all retailers now offering very large discounts.4 Further, as shown below in section 2.9, there is observable convergence of retailers’ pricing strategies in the Victorian retail energy market. That said, we do not contend that all retailers are identical in their pricing and portfolio strategies.

We think it most likely that in their hunt for higher discounts, retailers will be reluctant to increase their undiscounted prices beyond a level that would attract the attention of regulators and commentators. We also consider that retailers will accept that their most generous offers will need to produce low or negative margins — after all, these discounted market contracts sit at the cutting edge of where they vie against their competitors for customers. Some losses may be tolerated at the cutting edge if they can be offset elsewhere in the overall portfolio.

This leaves portfolio balance as the ‘swing variable’. In order to satisfy the above strategic objectives and constraints, retailers must ensure their portfolios consist of the correct balance of discounted and undiscounted contracts. As the headline discount on offer

4 Ben-David (2015)
increases, retailers must increasingly ensure their portfolios are correctly balanced. Failure to do so will see the return on their portfolios fall below the level required by their shareholders and financiers.

This is the most significant finding from the portfolio model of retailer contracts: Aggressive discounting must be accompanied by correspondingly aggressive strategies to unwind the discounts provided to existing customers. Higher discounts mean fewer customers can be receiving the benefits of those discounts. Aggressive discounting must be accompanied by aggressive portfolio management.

A range of stylised scenarios are modelled in the accompanying paper based on the discounts currently observable in the Victorian retail energy market.⁵ This modelling suggests that the proportion of customers actually receiving the benefit of discounts on their market offers may be a little over one quarter. Alternatively stated, despite all the marketing by retailers and all the coverage given to discounts by regulators and others, almost three out of four customers may not be receiving the benefits of these discounts.

How retailers ensure their portfolios are balanced is the subject of the following discussion.

### 2.4 How retailers ensure their portfolios remain balanced

The pressure on retailers’ to unwind discounts in order to keep their portfolios in balance, explains why discounts (and particularly very high discounts) are now only offered on conditional terms. The stricter the conditions, the more likely it becomes that the customer will fail those terms and will incur the undiscounted price.

For now, paying on time and access to direct debit are the two dominant conditions attached to discounts. It would seem that these terms are regressive insofar as they disadvantage customers who are least likely to have ready or reliable access to the funds required to guarantee these conditions can be met. It may be argued that customers in this category impose higher costs on retailers (that is, the cost of pursuing payment) and that the loss of a discount reflects these higher costs.⁶ This may be true or partially true. However, it is definitely true that as conditional discounts have increased in size, the risks for customers who may be vulnerable has increased markedly.

The impact of these higher discounts on vulnerable customers is best demonstrated with a numerical example. A customer facing a discounted energy bill of $1800 per year who fails to pay on time faces an additional charge of $200 (on an annual basis) if their conditional

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⁵ The term “stylised modelling” refers to an approach where demonstrative values are used in the model to derive results rather than empirically derived estimates.

⁶ Recall, late payment fees are banned in Victoria under legislation.
discount is worth 10 per cent. The comparable annualised ‘bill shock’ rises to $969 if the conditional discount is valued at 35 per cent.

Unwinding discounts is not a retailer imperative affecting vulnerable customers only. Arranging automatic prepayment and direct debit and honouring those arrangements may not present too many challenges for other customers. Different strategies are required to shift this group of customers off their discounts.

One such strategy is to make the continuation of discounts contingent on the customer having to take some action at particular trigger points — typically, at the end of a contract — to ensure the continuation of favourable prices. The author experienced one such strategy as described in Box 1.

**Box 1. How a discount just slipped away**

The contract covering the provision of gas to the author’s household was coming to an end. The contract had provided a reasonably generous discount on condition that bills were paid on time and via direct debit. This was arranged and honoured. As the contract approached its termination date, the retailer issued a letter to the account holder advising the contract was coming to an end (and as required by regulation). The letter consisted of few words and noted that:

- the contract was coming to an end
- the account holder should contact the retailer to enter into a new discounted arrangement, and
- gas would continue to be supplied “as usual … but you won’t get the discounts any more [sic].”

In contrast to the retailer’s sales material, reminder notices and disconnection warning notices, the letter was unremarkable, somewhat ambiguous and easily ignorable. Arguably, it was designed to be ignored unlike the aforementioned documents.

In this case, the letter was not ignored. Research was conducted via the Victorian Government Website (Victorian Energy Compare at switchon.vic.gov.au) to assess the current options available in the market. An alternative supplier was identified and discussed by the householders. However, the weeks slipped away, full of other household and workplace distractions. The contract came to an end. The household failed to act as required by the retailer’s letter and is now paying considerably higher charges than before. This is despite the household still paying on time and via direct debit.
There are a number of interesting and important observations to be made from the author’s experience. First, the household is continuing to pay on time and via direct debit even though the retailer terminated the original contract. In other words, although the retailer has renewed the contract and continues to benefit from the household meeting the conditions requisite for a discount, it has discontinued the discount. Second, the retailer’s letter did not advise the household of the tariffs it would be paying under the new contract. It merely advised that a discount would not be applied in determining that price. Third, the letter did not advise the customer of the name given to the new contract on which it would be placed. Fourth, while the customer had previously been on a one year contract, the retailer rolled the customer on to an ‘evergreen’ contract that would now last indefinitely (or until the customer took some action to end that arrangement).

One simple inaction has ensured that this customer now pays among the highest rates in the market and in the absence of any further action by the customer, it will continue to do so indefinitely.

And it’s a curious thing. The absence of one phone call will cost the customer many hundreds of dollars — but that phone call has no bearing on the retailer’s cost of service or the amount of energy the customer will consume or the transaction costs associated with managing that account or the payment arrangements. And, the retailer is still getting paid on time and via direct debit.

Despite the fact that there is absolutely no relationship between a phone call being made and the future behaviour of the customer or the costs incurred by the retailer, the retailer is requiring customer to pay considerably more for their energy if the phone call is not made. The requirement for a customer-initiated phone call is a pure contrivance created to trigger the potential shift of customers on to higher priced contracts.

It is very likely that this household is not unique. The inertia shown by this customer is likely to be replicated across the State in many hundreds of thousands of households and small businesses. Many hundreds of thousands of customers multiplied by many hundreds of dollars adds up to many millions of dollars of revenue for retailers. The absence of phone calls must be the most profitable source of revenue in the retail energy market. Clearly, there are very strong incentives for retailers to invest in absent phone calls.

It is now possible to see why contract lengths are getting shorter. The more often these trigger points are reached, the more likely customers are to fail to take the arbitrary action required of them.

But these are not the only strategies available to retailers.

The retail rules permit retailers to alter the prices they charge customers at any time, subject to exercising their best endeavours to notify customers beforehand. Therefore, it is not surprising that many contracts are now structured as being ‘evergreen’. They only end if
the customer chooses to terminate them. Because these market contracts last indefinitely, contracts preserve the opportunity for retailers to alter charges at any time, and repeatedly, during the contract.

( Note, the ability for retailers to alter charges during the life of a contract is permitted under the National Energy Retail Rules (NERR) and the Victorian Energy Retail Code (ERC). In 2014, the Australian Energy market Commission (AEMC) rejected a rule change application which would have limited the opportunities for retailers to alter prices during a contract. The Essential Services Commission has not reviewed this provision in the ERC. )

We know of one case where a customer shopped around assiduously for the best deal. Some months after entering the contract, the customer received a letter from the retailer. The letter advised that due to circumstances beyond its control, the retailer was compelled to raise it charges. The retailer provided assurance that its discounts would continue to be honoured. The customer went to the retailer’s website and found that the retailer’s discounted offers had indeed increased in price. However, when the customer’s next account arrived, the charges applied to the customer’s account had effectively increased the customer’s cost of energy by almost three times the increase that would have applied with the charges shown on the retailer’s website. The retailer has used these alleged “circumstances beyond its control” as a trigger to, in effect, shift this customer off their generally available discounted prices.

These strategies have important consequences.

As retailers shift customers off their generally available discounted prices, those customers ‘disappear’ from view. No-one other than the customer or retailer can observe the prices being paid by those customers. Even though a customer knows the price it is paying, it can no longer verify whether the retailer is honouring the discounts it originally offered. Furthermore, when customers disappear, regulators and other observers (including other retailers) cannot observe the prices those customers are paying. All that remains observable are the generally available offers in the market place.

The accompanying paper provides numerous other strategies retailers are adopting to make customers ‘disappear’. These strategies are documented in Appendix A of this paper.

There is no a priori reason to assume that observable prices and ‘disappeared’ prices will move at the same rates. In fact, as the above examples show, it is quite likely that increases in observable prices will understate the increases faced by customers who have ‘disappeared’.

Based on the analysis described above (and other analysis described below), it is possible that 60-70 per cent of the Victorian retail energy customers have ‘disappeared’. This finding

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7 AEMC (2014)
is particularly significant because it implies that the price movement reported by the Essential Services Commission and other regulators and commentators may not reflect, and may understate, the price increases experienced by the majority of Victorian customers. This is discussed further in section 6.

2.5 **Is customer inertia a product of nature or nurture?**

It would seem that customer inertia plays an important role in enabling the portfolio strategies of energy retailers. If customers were highly responsive to changes in price, the ability to sustain strategies that saw customers quietly moved off their discounts would not be sustainable. As Thaler and Sunstein note in the opening pages of their seminal book, *Nudge. Improving Decisions about Health, Wealth, and Happiness* (2008):

“**First, never underestimate the power of inertia. Second, that power can be harnessed.**” (p.9)

People are ‘creatures of habit’. They will tend to do what they have always done rather than confront having to question whether they ought to be doing something else. Customers will disengage from decision-making and let their earlier choice prevail for as long as they’re not compelled to make another choice.

But habits are malleable. They can be altered by external influences. External forces can be inadvertent or deliberate. If another party can deliberately and successfully alter a ‘habit’ then the result can be to the benefit of one or both parties. Thaler and Sunstein continue:

“The first misconception is that it is possible to avoid influencing people’s choice. In many situations, some organisation or agent must make a choice that will affect the behaviour of some other people.” (p.10)

Energy retailers vie against each other to influence customers’ choice. However, the real reward is not just the sale of a contract to supply energy. The real reward lies in the benefits derived from customer ‘inertia’. Two features of the retail energy market distinguish it from almost every other market. First, energy is a repeat purchase under a retail contract. That is, a contract establishes a series of transactions rather than a simple, single purchase. Second, retail energy contacts roll-over at the end of their term so a customer will remain with the same retailer unless the customer opts to enter a contract with a new retailer.

Because of these two features, customer inertia offers energy retailers opportunities and benefits that are rarely seen in other markets. The previous section provided an example of these opportunities. Without customer inertia, it would not be possible for retailers to make customers ‘disappear’ from the market. If customers were highly sensitive to change, retailers would not be able to alter terms, conditions or prices without fear of losing the
customer to a rival. Customers’ inertia dampens retailers’ fear of competition. Inertia dampens competition.

Some degree of customer inertia will be innate but given its strategic value to retailers, we contend that retailers have developed strategies for ‘inducing’ customer inertia. The rewards are just too great for them not to do so. It would be commercially naïve to assume that retailers were merely the passive beneficiaries of any inertia that happened to fall their way. In box 2 we examine different actions retailers might take to induce customer inertia.

To be clear, we are not suggesting that there are not perfectly legitimate commercial response from energy retailers. Without inertia they could not rebalance their portfolios; and without rebalancing their portfolios, they could not offer the very large headline discounts that now prevail in the market.

While inertia and induced inertia may be important commercial features of the retail energy market, at least one prominent voice has raised questions about how it is being exploited. The chief executive of one of Australia’s largest energy retailers has publicly questioned why energy retailers adopt pricing strategies that “reward disloyalty” by imposing higher costs on their most loyal customers. This was an open acknowledgement that inert customers pay the highest prices.

The benefit retailers derive from customer inertia will last for as long as no new influence disturbs the relationship between a retailer and its inert (or “loyal”) customers — and that might be a for a very long time. For example, in its 2015 survey of customers, the AEMC found that around half of Victorian electricity and gas customers had not switched retailer or plan in the last five years.

However, even though a retail energy market transaction only involves the retailer and the customer, before that transaction occurs, a choice needs to have been made. That choice involves more than just those two parties.

For as long as the retail energy market is regulated under a dedicated regulatory framework, then regulators are also a party to the choices made by customers. As the second quote from Thaler and Sunstein makes clear, anyone who is a party to a decision necessarily has some influence in that decision — even if that decision includes not making a decision. The question for regulators therefore becomes: What influence do they wish to impart on customer choices in the retail energy market and how do they respond to customer inertia and retailers efforts to induce inertia? We return to this question in section 5.2.

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8 Australian Financial Review (2016)
Inertia may be an innate characteristic of customers but it will also be affected by the conduct of retailers and by the measures they put in place in their interactions with customers. This might include the following examples.

- **Information overload.** Many commentators (including the author) have highlighted the challenge of navigating the abundance of information confronting customers in the retail energy market. Some have cited the reference in the comic strip Dilbert (by Scott Adams) to “Confusopoly” (an economic and marketing term referring to a purposeful act by a seller or group of sellers to confuse the buyer in order to ease the sale).

- **Tacit dissuasion.** As recounted in box 1, even when notifications are sent to customers, they are not necessarily designed to ‘grab’ customers’ attention.

- **Forgetfulness.** Retailers are obliged to exercise their best endeavours to notify customers a few weeks in advance that their contracts are coming to an end. Best endeavours can be defined broadly in this context and is not particularly enforceable.

- **Unwelcomed conversations.** As discussed in section 2.4, discounts might be made contingent on the customer phoning the retailer. If nothing has changed in the customer’s circumstances, customers are unlikely to welcome the prospect of having to make a call to discuss how nothing has changed.

- **Unwelcomed conversations with machines.** The widespread use of interactive voice response (IVR) technology leaves customers facing a button-pushing labyrinth of computerised instructions (which aren’t always clearly given).

- **Why bother?** As survey findings show, many customers are now under the impression that any price gains they make will be fleeting. Pricing and portfolio strategies are consistent with this impression.

- **Require perseverance.** While plenty of information is published about offers and contracts (in line with regulatory obligations), navigating the information forest requires significant determination.

- **Disappearing customers.** As discussed in section 2.4, retailers have developed strategies that result in customers ‘disappearing’ from the observable market when their discounts are discontinued making it difficult for customers to gauge where they stand price-wise relative to the rest of the market.

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10 Most recently, Energy Consumers Australia (2017)
11 For further discussion of how customers disappear, see Appendix A.
2.6 Inertia plus overconfidence bias leads to expensive outcomes for customers

Having assessed how retailer portfolio strategies will affect their actions in the retail energy market, the analysis in the accompanying paper turns to an examination of how those strategies might affect customer’s utility (or benefit) as well as the decisions we might expect customers to make in response to those retailer strategies.

The analysis draws on expected utility theory which is in the tradition of the neo-classical school of economics. (Later, we turn to behavioural economics for further insights.) In brief, expected utility theory assumes that individuals (or households) will always prefer more consumption if the opportunity avails itself, but they will derive less additional benefit from each additional unit consumed. This is the well-known principle of diminishing marginal returns which provides the basis for another well-established principle, namely, that consumers are generally risk averse.

This principle of economics is integrated with the portfolio model by assuming that consumers will always prefer to pay less for their energy (i.e. discounted prices) because doing so provides them with additional funds to spend on other household needs or wants. We consider this to be a reasonable and defensible assumption.

The analysis models the choice consumers might be expected to make when confronted with two options when choosing to purchase their energy. The first type of offer involves an unconditional market contract. This is a contact where prices (or tariffs) are known with certainty. The price to be paid is not conditional on the customer having to act in any way. For example, the price to be paid does not depend on whether the customer pays on time or via direct debit. In contrast, the second offer is conditional on the customer meeting certain requirements (such as paying on time and via direct debit). The price of unconditional market contracts is higher than the price of conditional contracts when the discount applies but lower than the price when the discount is removed. This must be the case otherwise there would be no reason for retailers to offer both types of contracts in the market.

To begin, we assume that customers are perfectly rational. That is, they know that if they enter a conditional market contract then there is a positive probability that they won’t benefit from the discounted price for the entire length of that arrangement. These rational customers will expect to pay the discounted market price some of the time and the undiscounted price the rest of the time.

In deciding which type of energy contract to enter, customers must weigh the benefits of receiving the unconditional price all of the time versus receiving the discounted price some of the time and the undiscounted price the rest of the time.

The analysis in the accompanying paper shows that under these circumstances, customers should always be expected to favour unconditional market contracts over conditional
market contracts no matter what discount retailers offer on their conditional contracts. In other words, despite the huge conditional discounts on offer, customers should have no interest in these contracts — instead preferring the certainty provided by unconditional market offers. Traditional economic principles suggest that customers don’t want to ‘bet’ on the retail energy market.

There’s only one problem with this conclusion. It does not hold empirically.

Quite obviously, customers enter conditional market contracts in great numbers. They are prepared to ‘take a punt’ that they will be able to maintain their discounts despite the conditions in their contracts and any other actions their retailers may take to lessen or remove their discounts. It seems customers just won’t act the way economists expect them to behave.

Reconciling the findings of the normative model with the observation that free-willed customers tend to disobey the ordinances of economics requires that some of the assumptions underpinning the model be loosened. The accompanying paper assesses various options for how theory and reality might be reconciled. On balance, it would seem that the most reasonable explanation is that customers are not good judges of how likely they are to retain their discounts after entering a conditional market contract. It would appear that customers over-estimate the likelihood that they will meet the requirements of their contractual arrangements. It would appear they overestimate how long they will be able to maintain their discounts.

In psychology and behavioural economics this phenomenon is known as ‘overconfidence’ bias whereby individuals tend to overestimate their own capabilities. For example, ask a room full of randomly gathered people how many of them are better-than-average drivers and invariably most hands will go up.

Overconfidence and inertia help to explain a lot about the retail energy market. Overconfidence explains why so many customers enter into conditionally discounted contracts while inertia explains why they do nothing when they lose their discounts. It’s because of overconfidence and inertia (and induced inertia) that customers can be found meekly paying some of the highest prices the retail energy market has to offer.
2.7 Behavioural economics explains customer choice and regulator responsibility

These are not the only insights to be gained from behavioural economics. In 1979, Kahneman and Tversky published their seminal paper on ‘prospect theory’ (for which they won the Nobel Prize in Economics in 2002).\(^\text{12}\) Whereas expected utility theory is normative, prospect theory offers a descriptive theory of how people actually make decisions, rather than how they ought to be making those decisions. Kahneman and Tversky’s paper has become one of the most widely cited economic papers of all time. And now, it has been applied to the retail energy market.

In brief, Kahneman and Tversky found that: (i) individuals dislike losses more than they like gains, (ii) individuals are risk averse when it comes to holding on to gains but more accepting of risk when it comes to avoiding losses, and (iii) people make decisions depending on how a problem is presented to them (or how it is ‘framed’). The third of these findings, in particular, represented a very substantial shift from the neo-classical tradition of economics.

The accompanying paper shows that the types of retail energy contracts customers choose — whether conditionally discounted contracts or unconditional contracts — will depend on how they perceive that choice. If the choice is framed in one way, they will prefer to ‘take a bet’ on conditionally discounted contracts; while if it is framed in another way, the will choose the certainty provided by unconditional market contracts. As that analysis shows, for customers to prefer conditional market contracts over unconditional market contracts, they must perceive entering a retail energy contract as a loss to be avoided, rather than a benefit to be gained.

Why do customers see purchasing energy as a loss to be avoided, rather than a gain to be attained? Why does this framing of the choice dominate its converse? What influences bear on customers' view of the retail energy market and the way they perceive entering into a contract?

We believe the answers to these questions are all related, and the outcome is no accident. Thaler and Sunstein provide the critical clue when they emphasise that all the parties to a decision unavoidably and invariably influence the choices that are ultimately made. Clearly, retailers are a party to a customer’s decision about whether to enter a contract but so too are regulators. Regulators are a party to customers’ choices by virtue of the codes and rules they administer governing the contracts and conduct of energy retailers.

Since the introduction of full retail competition 15 years ago, energy retailers and regulators alike have offered the reassuring message that consumers can save considerable amounts of money by shopping around. Customers need only shop around to find discounted

\(^{12}\) Kahneman, D and Tversky, A (1979)
contracts. By continually reinforcing this message, retailers and regulators have established a narrative with consumers that prices are only ‘high’ if they don’t take advantage of the offers available to them.

This message has been reinforced in recent years as headline discounts have increased to unprecedented levels. Discounts of up to 30 to 35 per cent have only served to make regulators’ message seemingly more self-evident. It would seem the market is competitive and it delivers considerable savings to anyone who shops around. No-one need pay very high prices. No-one should pay very high prices. No-one should expect to pay very high prices.

As one market regulator recently wrote: 13, 14

“Some take the view that if you pay more because you don’t shop around, the market isn’t working. We consider that if you can pay a lower price by shopping around, the market is working.”

This is the same message retailers have used for many years to promote the benefits of retail competition.

Clearly, customers can shop around and clearly, they can pay a lower price if they do so. According to this message, the market is working because it is delivering benefits to customers. In other words: Discounted prices are there for the taking and customers who fail to shop around have, for all intents and purposes, made the decision to opt-out of the market. According to this message, discounted prices are the default. Discounted prices are the reference point around which choices in the market are framed.

From this reference point, there are only losses to be made because every other contract comes at higher price. With only losses to be made from this reference point, prospect theory demonstrates that customers’ aversion to losses will see them ‘gamble’ on conditional contracts rather than purchase unconditional market contracts.

The significance of this finding is profound.

Regulators have acted in concert with retailers to ‘frame’ the market around a very particular reference point — one that encourages customers to ‘gamble’ on their retail energy contracts. Regulators have encouraged customers to enter into contracts where the interests of the customer and the interests of the retailer are not aligned. Indeed, they are pitted against each other. Customers will want to maintain their discounts, while retailers

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13 Independent Pricing and Regulatory Tribunal (2016)
14 A similar view was expressed by Littlechild (2014) in his criticism of the UK regulator. “[Ofgem] previously argued that ‘you pay a lower price if you shop around, so the market is working’. Now it argued that ‘you pay a higher price if you don’t shop around, so the market is not working.’ The glass was now half-empty rather than half-full.”
will be working to unwind those discounts by promoting overconfidence, inducing inertia and making customers ‘disappear’.

This misalignment of incentives is concerning. It does not reflect our expectations of a normal, healthy product market where the interests of customers and producers are aligned in pursuit of the common good. In healthy markets, consumers value goods and services. Producers endeavour to produce those goods and services at the prices consumers are willing to pay. The market serves to reveal those prices to all parties. These characteristics do not describe the modern retail energy market.

2.8 How many customers benefit from discounts? Not many

Having developed a model of energy retailers’ pricing strategies and examined its implications for customers and regulators, the accompanying paper also utilises the model to undertake an empirical analysis of the Victorian retail energy market.

In its annual Victorian Energy Market Report 2015-16 released in November 2016, the Essential Services Commission reported on average price outcomes for a range of different contract types for electricity and gas customers. These findings can be used in the portfolio pricing model to estimate the proportion of customers who are receiving the benefits of the discounted prices marketed by energy retailers in Victoria. The results reported by the Commission are reproduced in Table 1. The table also shows the implied proportion of customers receiving the benefits of the discounted prices using the portfolio pricing model (see shaded results).

Table 1 shows that energy retailers are clearly more ‘aggressive’ in their pricing and portfolio strategies in the electricity market than in the gas market. The average level of discounts is higher and the proportion of customers on discounted rates at any given time is considerably lower in the electricity market. Electricity discounts were, on average, worth 14.5 and 17.8 per cent in 2014-15 and 2015-16, respectively. In the retail gas market, the comparable discounts were 11.3 and 12.9 per cent. At the same time, the proportion of customer on market contracts receiving discounts was 0.565 and 0.313 in the electricity market, and 0.816 and 0.476 in the gas market. Taking into account that some customers still remain on standard retail contracts implies that the proportion of all customers who may be on discounted market offers will be somewhat lower, as shown in Table 1.

The proportion of residential electricity customers estimated to be benefiting from discounted market contracts in the electricity market fell to 28.9 per cent in 2015-16. This is considerably lower than the estimate of 51.3 per cent for 2014-15. The estimated proportion of residential customers on discounted retail contracts in the gas market was 42.5 per cent in 2015-16 compared to 72.6 per cent in 2014-15.
Table 1. Prices and discounts for electricity (4,000 kWh) and gas (54.4 MJ) in 2014-15 and 2015-16

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<tbody>
<tr>
<td>Standard Contract (P_S)</td>
<td>$1,384</td>
<td>$1,376</td>
<td>- 0.5%</td>
<td>$1,196</td>
<td>$1,258</td>
<td>+ 7.4%</td>
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<tr>
<td>Unconditional Market Contracts (P_M)</td>
<td>$1,223</td>
<td>$1,306</td>
<td>+ 6.8%</td>
<td>$1,097</td>
<td>$1,196</td>
<td>+ 9.0%</td>
</tr>
<tr>
<td>Discount on Unconditional Market Contracts against Standard Contracts</td>
<td>11.6%</td>
<td>5.1%</td>
<td></td>
<td>8.3%</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td>Conditional Market Contracts without discounts applied (P_U)</td>
<td>$1,332</td>
<td>$1,383</td>
<td>+ 3.8%</td>
<td>$1,208</td>
<td>$1,274</td>
<td>+ 5.4%</td>
</tr>
<tr>
<td>Conditional Market Contracts with discounts applied (P_D)</td>
<td>$1,139</td>
<td>$1,137</td>
<td>- 0.1%</td>
<td>$1,072</td>
<td>$1,110</td>
<td>+ 3.5%</td>
</tr>
<tr>
<td>Headline value of discount on Conditional Market Contracts</td>
<td>14.5%</td>
<td>17.8%</td>
<td>11.3%</td>
<td>12.9%</td>
<td></td>
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</tr>
<tr>
<td>Proportion of customers on market offers receiving the benefit of discounted prices (β)</td>
<td>0.565</td>
<td>0.313</td>
<td></td>
<td>0.816</td>
<td>0.476</td>
<td></td>
</tr>
<tr>
<td>Proportion of customers on standard retail contracts (γ_S)</td>
<td>0.091</td>
<td>0.077</td>
<td></td>
<td>0.111</td>
<td>0.106</td>
<td></td>
</tr>
<tr>
<td>Proportion of all customers receiving the benefit of discounted prices</td>
<td>0.513</td>
<td>0.289</td>
<td>0.726</td>
<td>0.425</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a The discount is given by 100 x [ 1 – P_M / P_S ]

b The headline discount is given by 100 x [ 1 – P_D / P_U ]

c as supplied by the Essential Services Commission

d The proportion is given by β x ( 1 – γ_S )
These are remarkable findings. For household electricity customers, they suggest that:

- although the average discount had increased during 2015-16, only 28.9 per cent of household may have been benefiting from the discounted price of electricity

- there had been a precipitous decline in the number of customers on discounted contracts over the course of one year. The equivalent figure in 2014-15 had been 51.3 per (when the discounts were somewhat more modest), and

- the combination of higher discounts (lower prices) and lower demand for discounted contracts can only be explained by a structural shift in the demand for such contracts. That is, the demand curve for discounted contracts has contracted substantially.

The retail gas market appears to be less aggressive but it is certainly trending in the same direction.

The portfolio model does not tell us the direction of the causal relationship between these observations. One possibility is that customers have become more ‘inert’ in 2015-16. As their discounts came to an end, they more willingly accepted undiscounted prices without feeling compelled to re-enter the market in search of better offers. As fewer customers demanded discounts, retailers could afford to offer higher discounts to the most price-sensitive customers. The alternative explanation would involve retailers becoming more aggressive in the management of their portfolios — that is, working harder to induce customer inertia. To the extent they could reduce the proportion of their existing customers on discounted market offers, retailers would have greater scope to market more highly discounted contracts to new customers (and existing customers threatening to leave).

On balance, we consider it highly unlikely that there would be such a precipitous shift in the way households engaged with the retail energy market over the space of just one year. These figures imply a sudden change of attitude in over 1 million Victorian household account holders. There is nothing in the available customer survey data to suggest attitudes changed so markedly. While some customers may have become inert, a more likely explanation would seem to be that retailers have become more effective at ‘inducing’ inertia among their customers.

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15 Energy Consumers Australia (2017)
2.9  Bigger bets but less to win

The Victorian Energy Market Report 2016 published by the Essential Services Commission also provides data at a lower level of aggregation. Annual bills for customers using 4000 kWh per year are calculated and plotted for all generally available offers in each distribution zone. The plots show the amount payable under each offer having taken into account all available discounts. One of the scatter plots is reproduced in figure 1 which shows the results for the Ausnet distribution zone in 2014-15 and 2015-16. Similar patterns are observable in other distribution zones.

Four developments are noteworthy when comparing the two panels in figure 1.

- There was a small, upward shift in the scatter diagram in 2015-16 indicating prices increased somewhat across all levels of discounting.
- There appears to be a general migration in 2015-16 towards the right side of the scatter plot with retailers making available more (fewer) offers with higher (lower) discounts.
- In 2015-16, discounted offers are increasingly clustered in two parts of the scatter, namely, around 15 per cent and between 25 to 35 per cent.
- There were significantly fewer low-cost, low-discount offers left in the market in 2015-16. That is, the lower, left corner of the scatter plot appears to have hollowed-out.

A structural shift appears to be underway in retailers’ pricing and portfolio strategies. Customers who wish to manage the price of their energy use — that is, enter into a contract in the lower region of the scatter plots — are increasingly required to enter into contracts with large conditional discounts. Alternatively stated, households wishing to manage their energy costs are increasingly required to place larger ‘bets’ in the retail energy market. Lower cost energy is available, but if the customer fails to ‘win’ the bet, the cost of losing is increasing very significantly.

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16 The Ausnet distribution zone covers the outer eastern Melbourne metropolitan area and reaches north and east to the State’s borders.
Figure 1(A) Scatter plot of average annual household bills (4000 kWh) and level of discount in the Ausnet distribution zone in 2014-15

Figure 1(B) Scatter plot of average annual household bills (4000 kWh) and level of discount in the Ausnet distribution zone in 2015-16
An example drawn from the scatter plots is instructive.

In 2014-15, customers could enter an electricity contract offering a 5 per cent discount. That contract would have cost around $1250. If they failed to meet the contract’s conditions (or if they failed to renew their contract on its expiry) they would find themselves paying an additional $66 on an annualised basis. These customers could save around $100 by shopping around because there were also discounted contracts available for around $1150. These contracts entailed a 30 per cent conditional discount but this higher discount meant that they would pay an additional $493 (annualised) if they failed to meet the conditions of their contract (or renew it on expiry). In choosing between these two contracts, customers could decide whether they would accept the more expensive but less risky contract; or whether they would pursue the savings (of $100) in return for accepting the risk of higher payment if they did not meet the conditions.

By 2015-16, the first of these two contracts had almost disappeared while heavily discounted contracts became even more heavily discounted. It was still possible to enter a contract for around $1150 but such contracts now entailed a 35 per cent conditional discount. So even though there was no change in price, the penalty for failing to meet the conditions of the contract (or renew it on expiry) had now increased to $619 (annually). The ‘penalty’ for failing to meet the contract’s conditions had increased by $126 (from $493 to $619).

These finding suggest that household customers looking to lower their energy costs are now being required to take bigger ‘bets’ on the retail energy market. However, despite placing bigger bets they are not being given better upside benefits in return for those bigger bets — after all, they are still paying $1150 for the cheapest offers in the market. All the additional risk has been loaded on the downside of their contracts. The cost of ‘losing’ can now be many hundreds of dollars over the course of a year (eg. $619).

And, what’s more, customers’ chances of ‘winning’ have declined. As the results in table 1 show, the odds of a household winning on their electricity contracts is now less than 30 per cent on average.

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So, this is what the deregulated retail energy market had delivered in Victoria by 2015-16:

Bigger bets with more for customers to lose than to win and with the chances of ‘winning’ seemingly diminishing each year.
3. Discussion 1: Discounts ain’t Discounts

Overall, the findings in the accompanying paper, *An economic view of price discounting in the retail energy market*, which were discussed in the previous section, give rise to a sense of unease. These findings do not align with the usual messages we hear about shopping around for the best offer in the retail energy market. They give rise to many questions about the state to which the retail energy market has now evolved. Contracts no longer appear to be contracts. Discounts no longer appear to be discounts. Competition no longer appears to be competition.

3.1 What is a discount?

Understanding this unease requires we return to perhaps the most obvious question: What is a discount? We could resort to the many excellent dictionaries now available in hardcopy or online to answer this question. These sources provide various logically and syntactically accurate answers but they do not necessarily provide a simple answer about what most people would understand the term *discount* to mean. For that, we have turned to our online search engine and simply typed in the question. This was the response.

**discount** noun

a deduction from the usual cost of something

The reference to “usual” is pivotal to understanding what a discount represents.\(^{17}\)

Rather than embark on a long-winded, philosophical exploration of the term ‘usual’, we instead return to the parable at the start of this paper. What might we expect that most people would have accepted as the ‘usual’ price in that imagined scenario? In that example, there were three different prices for exactly the same collection of goods. Clearly, the discounted price the customer would have paid had the slot machine produced a favourable result (that is, $68.07) was not the usual price because it was would have only applied had that favourable outcome eventuated. Therefore, the usual price must have been either price shown on the customer’s receipt ($104.72) or the shelf-price of the goods being purchased ($87.46). As far as the supermarket was concerned the discount being offered (35 per cent) was against the amount shown on the customer’s receipt. But is this a sustainable argument?

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\(^{17}\) Note, we expect the term “cost” is being used synonymously with the term ‘price’ as this is not a technical, economic definition.
The supermarket is offering the customer two possible purchasing options. The customer could reject the ‘Spin to Save’ offer and just pay the shelf price. Alternatively, the customer could accept the offer to ‘Spin to Save’. We can assume that the supermarket wouldn’t be making both offers available unless it was confident that its overall returns would not be affected by the choice customer make — and they would only be unaffected if the supermarket’s return did not depend on customers’ choices.

Under the ‘Spin to Save’ option, the supermarket is offering customers the probabilistic opportunity to pay a low price versus the probabilistic opportunity to pay a high price for exactly the same set of goods. If they win, customers pay below the shelf price; if they lose they’ll pay above the shelf price. Win and customers make a gain; lose and they make a loss (at least relative to the shelf price).

The highest price ($104.72) is only paid if the customer accepts and loses the offer to ‘Spin to Save’. That conditionality means it cannot be the usual price. The undiscounted price is nothing more than the so-called, ‘discounted price’ ($68.07) grossed up by the value of the alleged discount (35 per cent). These can only be derived relative to each other. Once the supermarket determines any two of the values, the third is derived by reference to the two chosen values.

Figure 2. Imaginary supermarket’s ‘Spin to Save’ offer to customers

<table>
<thead>
<tr>
<th>‘Usual’ Price</th>
<th>$87.46</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Shelf price)</td>
<td></td>
</tr>
<tr>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Pay to play ‘Spin to Save’</td>
<td>$17.26</td>
</tr>
<tr>
<td>Lose the spin</td>
<td></td>
</tr>
<tr>
<td>Total amount paid</td>
<td>$104.72</td>
</tr>
<tr>
<td>Win the spin</td>
<td></td>
</tr>
<tr>
<td>Receive</td>
<td>$36.65</td>
</tr>
<tr>
<td>Total amount paid</td>
<td>$68.07</td>
</tr>
</tbody>
</table>

(Price on receipt)
If neither the discounted price nor the undiscounted price represents the usual price, then only the shelf price remains to represent the ‘usual’ price of the products. Clearly, the supermarket’s claim of a 35 per cent discount is therefore wrong and misleading because the discounted price ($68.07) is not 35 per cent less than the ‘usual’ price ($87.46).

Therefore, the undiscounted price ($104.72) represents the ‘usual’ price ($87.46) plus another amount ($17.26). This other amount represents the cost of playing ‘Spin to Save’ in the hope of winning $36.65. In tote terms, betting $17.26 in the hope of winning a payout of $36.65 represents a payout rate of $2.12. ‘Spin to Save’ is represented diagrammatically in figure 2.

Under ‘Spin to Save’, customers can supplement their purchase at the usual price by also placing a bet in the hope of winning the prize ($36.65). Having reached this conclusion, we again asked our search engine to help us with the definition of another well-known term:

**gambel** *noun*

a risky action undertaken with the hope of success

The supermarket’s claims about the value of its discounts are disingenuous and they are misleading. ‘Spin to Save’ is not offering customers a discount. ‘Spin to Save’ is offering customers the opportunity to pursue a risky action undertaken with the hope of success. ‘Spin to Save’ is not a discount. It is a gambling product.

### 3.2 From imagined supermarkets to very real retail energy markets

Turning from the world of imagined supermarket purchases to very real world of retail energy contracts we find energy customers are also faced with different pricing options. From Table 1 we see that in 2015-16, a medium-sized Victorian residential gas customer had a choice between two types of market contracts. The first type of offer involved a price with no conditions attached. On average, such contracts were priced at $1196 per year. The second type of offer involved a conditionally discounted price of $1110 per year (on average). If the conditions were not met, the average price rose to $1274. In retailers’ marketing terms, this conditional contract offers the equivalent of a 12.9 per cent discount.

As in the case of the imagined supermarket, we are left wondering which is the usual price. As in the earlier example, the undiscounted price ($1274) cannot be the usual price.
The highest price ($1274) is only paid if the customer accepts and loses the offer to enter a conditional contract. That conditionality means it cannot be the usual price. The undiscounted price is nothing more than the so-called, ‘discounted price’ ($1110), grossed up by the value of the alleged discount (12.9 per cent). The usual price is therefore best represented by the unconditional market price ($1196) in which case, the discounted price ($1110) is not 12.9 per cent less than the ‘usual’ price.

As in the earlier imaginary example, in this real world example customers can select between the two contracts. They could purchase the lowest priced contract at $1110 which would provide a saving of $86 compared to the unconditional market contract. However, this conditional contract comes with the risk of ‘losing’ in which case the price could be $164 higher (at $1274) if the conditions were not met.

Therefore, the undiscounted price ($1274) represents the ‘usual’ price ($1196) plus another amount ($78). This other amount represents the cost of entering a conditional contract in the hope of winning $164. In tote terms, placing a bet of $78 in the hope of winning $164 represents a payout rate of $2.10. The relationship between there retail gas contracts is shown in figure 3.

Figure 3  Retail energy market offers to customers

```
<table>
<thead>
<tr>
<th>'Usual' Price</th>
<th>$1196</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay to enter a conditional contract</td>
<td>$78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conditions not met</th>
<th>Conditions met</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1274</td>
<td>$1196</td>
</tr>
</tbody>
</table>

Total amount paid

Headline discount 12.9 %  

(Conditional market contract without discounts)  
(Conditional market contract with discounts)  
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It would seem that the world of real energy retail contracts is uncomfortably similar to the world of imagined supermarket purchases. Retailers’ claims about the value of their discounts are misleading. Conditional market contracts are not offering customers a discount. Conditional market contracts are offering customers the opportunity to pursue a risky action undertaken with the hope of success. Conditional market contracts are not a discount. They are a gambling product.

The payout rates for electricity and gas ‘bets’ in 2014-15 and 2015-16 are shown in table 2. As shown in table 2, the odds have lengthened in 2015-16. That is, the payout rates are better which means the likelihood of winning has diminished — most notably, for electricity. This finding reflects the earlier conclusions that retailers are offering larger ‘discounts’ to customers in anticipation that fewer customers will ultimately benefit from those higher discounts.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Payout rates on conditional market contracts: electricity (4,000 kWh) and gas (54.4 MJ) in 2014-15 and 2015-16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average annual bill ($) – Residential</strong></td>
<td>Electricity - 4,000 kWh</td>
</tr>
<tr>
<td>Payout rates</td>
<td>$1.77</td>
</tr>
</tbody>
</table>
3.3 **Standard contracts don’t represent the ‘usual’ price**

It may be argued that, at least until recently, retailers pegged the undiscounted price on conditional market contracts to their standard contracts. This may be true but it is not relevant. Standard contracts sit outside the competitive market. While they are notionally available to all customers (because retailers are obliged to have, and publish the details of, their standard contracts), they are not offered as a genuinely competitive alternative to retailers’ market contracts. Their purpose is to serve as a legacy contract for customers who have never entered the market. They play a negligible role in the competitive market in which conditional and unconditional market contracts are offered to customers. Simply put: standard contracts are, by definition, dealing with circumstances that sit outside the competitive market and so therefore cannot also be interpreted as representing the “usual” price in the competitive market.

3.4 **The ‘usual’ price in other markets**

The so-called ‘discounts’ available in the retail energy market are not comparable to the discounts offered in other markets. Elsewhere, the “usual” price against which the discount is applied is discernible. It may be defined by a seller’s recommended retail price or by the prices charged by a competitor. Perhaps most commonly, it is defined as the prices previously charged for those goods or services. None of these definitions can be applied in the retail energy market where the undiscounted price of a conditional market contract is a contrived value.

Even where conditional discounts are offered in other markets, failure to meet the requisite conditions does not entail a penalty being paid on top of the ‘usual’ price. The worst possible outcome is that the purchaser must pay the ‘usual’ price. Imagine a cinema which offered tickets at reduced prices to members but imposed a penalty price (greater than the general entry ‘door price’) if patrons forgot to bring their membership cards. It seems almost inconceivable yet it happens every day in the retail energy market.

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18 In very limited circumstances, standard contracts are also deemed to be the default contract on to which customers must be placed.
3.5 But retail energy customers can influence their odds of winning

In the imagined supermarket, the application of a discount depended on the outcome of a roll of the slot machine. The shopper had no capacity to influence the odds of winning. As far as the customer was concerned, whether they won or lost was a game of pure luck. Clearly, the same is not true in the retail energy market.

Under a conditional market contract, customers determine whether they will meet the conditions of their contracts (that is, whether they will pay on time or by direct debit). Arguably, they would not enter such contracts if they felt uncertain about meeting these conditions. Even though a retailer can unilaterally alter the prices it charges during the term of a contract, customers can always switch to another retailer (or seek to renegotiate a better deal with their existing retailer). At worst, they will incur a small exit fee for terminating the contract early.\textsuperscript{19} At the end of a contract, customers can negotiate a better contract with their existing retailer or switch to another retailer without incurring an exit fee. In other words, unlike the shopper in the supermarket, retail energy customers are able to influence their chances of ‘winning’ before, during and after the term of their contract.

The suggestion that customers can pay a lower price by shopping around is not in dispute. What we question is whether customers fully understand the changed nature of their purchases; whether the risks involved and the actions (and motives) of retailers are fully apparent to customers; and whether current regulatory frameworks and protections adequately attend to these new risks.

3.6 What’s wrong with customers having a little flutter on their energy bill?

A market contract involves a ‘risky action undertaken with the hope of success’. That makes it a gamble. In a bet, the interests of the parties are opposed. It is not possible for both parties to win. At best, gambling is a zero sum game. Someone must lose for someone else to win. When a customer places a bet with an energy retailer, the customer will ‘hope’ to meet all the conditions required to maintain their lower prices, while the retailer will ‘hope’ they fail to do so. Likewise, the customer will ‘hope’ that at the end of their contract they will negotiate an attractive replacement, while the retailer will ‘hope’ that they fail to do so. Retailers and customers hope for opposite outcomes. But they don’t rely on hope alone.

As the examples in box 2 demonstrate, retailers are not passive participants in the bet. They do not rely on ‘hope’ alone for their commercial success. They seek to influence their odds of winning the bet. To be clear, winning and losing should not be confused with notions of

\textsuperscript{19} In Victoria, the regulated exit fee (or Early Termination Fee) is set at $22 plus the pro-rated recovery of any inducements accepted by the customer. Many retailer don’t charge an exit fee.
fairness. Indeed, the payouts shown in table 2 are calculated on the basis of actuarially fair bets.\textsuperscript{20}

However, even if bets are actuarially fair they still pit the interests of the retailer against those of the customer. The final outcome for customers will be a tussle of wit, skill, unwavering attention and maybe a bit of luck. And that’s all assuming that:

- customers don’t mistake retailers’ (and regulators’) use of the term “discount” for its commonly understood meaning. Discounts in the retail energy market are not offered off the ‘usual’ price and that failing to pay the discounted price is will result on the customer paying the usual price plus an additional loading.
- customers realise the dual nature of the contracts they’re purchasing when entering a market contract, that is, they are purchasing energy and placing a bet of the persistence of the discounted price.
- customers know and understand the odds (or payout rates) factored into energy contracts so that they can appreciate the efforts that will made against them ‘winning’ the bets.
- customers appreciate the strategies used to influence their individual chances of ‘winning’ and they have the necessary information, tools and means to counter those strategies.
- customers’ expectations about their own behaviours are realistic (for example, they understand that they are likely to be subject to overconfidence bias and inertia), and
- customers entering such contracts appreciate the dollar cost of the ‘bill shock’ arising in the event of a losing bet and that they have the financial reserves to absorb this financial shock.

We think it very unlikely that many of these conditions are sufficiently satisfied in the current retail energy market. And, we expect that none of these conditions will be satisfied for a notable proportion of customers. Yet conditionally discounted market offers pervade the retail energy market. The discounts on offer are not discounts. The discounts on offer are lures — lures into buying a bundled product consisting of energy and a bet. And, as shown in table 2, the odds of winning those bets are lengthening.

\textsuperscript{20} An actuarially fair bet is one where the cost of the bet is equal to the expected value of the payout received in the event of a win. This expected value is, in turn, defined as the probability of a win multiplied by the payment received in the event of a win.
4. Discussion 2: Competition ain’t Competition

This section broadens the discussion about the emergence of ‘gambling’ products in the retail energy market to examine what this phenomenon might reveal about the state of competition in that market. The discussion then turns to a reflection on the argument that customers shopping around and switching suppliers is the best means for ensuring the market operates competitively.

4.1 Things aren’t as they appear in the retail energy market

It seems like hardly yesterday that energy retailers were locked in a door-to-door marketing war. Each retailer felt compelled to engage in this battle for fear that it would lose ground to its rival. Indeed, claims were even made by retailers that competition was driving up the price of energy because retailers could not avoid competing with their rivals. This claim is contrary to our usual notions of competition and its effect on prices. Costly arms races between rivals are not typically observed in competitive markets. The disciplines of genuine competition will serve to limit the funds firms are prepared to invest in their pursuit of customers. It is perhaps not surprising then, that many in the regulatory community dismissed as self-serving retailers’ claims about the costs of competition.

Elsewhere, we have taken a different view of these claims.21 We contended that retailers’ claims may well be true. But, if true, these claims must have also been revealing something else about the retail energy market — namely, that the normal disciplines of competition were not present, at least in sufficient force to constrain firms’ investments in door-to-door marketing to an efficient level. A marketing arms race was evidence that something was amiss with the state of competition in the retail energy market. We postulated that the essential nature of energy prevents customers from withdrawing from the market and so higher prices do not risk shrinkage of the market. Door-to-door marketing was a war over market share in a market of fixed size. It didn’t matter that door-to-door marketing was a zero sum game for retailers. It didn’t matter because the escalating costs of that war could be passed through to customers without fear of market contraction.

The battle only ended when the Australian Competition and Consumer Commission intervened and raised the risks (and therefore potential costs) to a level that saw the largest retailers withdraw from door-to-door marketing.

Are the discount wars we’re now seeing, as evinced by the rightward shift highlighted in the panels of figure 1, the new arms race in the retail energy market? Are retailers imposing a gambling culture on their most price sensitive customers simply because they can? Simply

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21 Ben-David (2015)
because this is a market for an essential service from which customers cannot exit? It would seem so.

But isn’t this a race to virtue? After all, discounts must surely be to customers’ benefit.

Caution needs to be exercised before reaching this conclusion. There are important differences between a marketing arms race and a discount arms race. While few people would welcome the intrusiveness of a door-to-door marketing, we expect most customers would be agreeable to offers of large and even larger discounts. This produces a not-so-subtle, but still quite fascinating, difference between these two types of arms race. Unlike a marketing arms race, a discount arms race disguises itself. It cloaks itself in a veil of market virtue. It allows retailers and regulators to point in unison to generous discounts as evidence of the competitiveness of the retail energy market — surely a great outcome for customers. No?

As this paper has argued, that is a very partial view of discounts. Headline discount rates are not real discount rates. Moreover, headline discount rates can only be rising if retailers are simultaneously becoming increasingly aggressive and adept at moving customers off their discounted offers. The discount arms race we’re now witnessing provides a convenient smokescreen for the emergence of the gambling products that are now gripping the retail energy market; products that pit retailers and customers against each other. Given the scale of resources available to retailers compared to those available to customers, this may not be such a great outcome for customers.

The emergence of one arms race so soon after the extinguishment of another one is cause for concern.

 Whereas we previously concluded that competition in a market for an essential service may be a necessary but not sufficient condition for an arms race; we are now concerned that competition in a market for an essential service is inherently unstable and prone to slipping into behaviours that drive up cost or risks (or both) for customers.

 We are not prepared to predict whether the discount arms race will eventually burn out or whether it will be extinguished directly or indirectly through regulatory intervention. We suspect, however, that regulatory interventions designed to douse retailers’ enthusiasm for selling gambling products to customers may do little to prevent the next arms race (though we have no idea what form it will take). We return to this topic shortly.
4.2 *More switching is no panacea*

The conventional view in regulatory circles has held that the opportunity for customers to switch to another energy retailer at any time and at low cost, will spur retailers to offer attractively priced contracts. This line of argument holds for existing customers as well as new customers. A retailer who excessively increases existing customers’ prices, risks losing them to other retailers. In the terms described in this paper, the conventional wisdom suggests that retailers will be reluctant to pursue aggressive portfolio management strategies that see their customers lose access to their discounted prices.

In other words, fear of losing customers to their rivals will drive retailers to offer — and *continue* to offer — attractive prices to their customers. Switching drives competition between retailers and competition drives attractive offers for customers.

Based on this view, the observed presence of heavily discounted market offers suggests that the competitive market is working and that the fear of losing customer is spurring competition between retailers. The increasing value of discounts observed in the market reinforces this view about the efficacy of switching in driving competition. The adherents of this conventional view urge customers to go forth and switch.

The portfolio model described in this paper and modelled in the accompanying paper, *An economic view of price discounting in the retail energy market*, leads to a markedly different conclusion.

The portfolio model implies a retailer would not be able to adopt more aggressive pricing strategies if it were not simultaneously able to withdraw its discounted prices from an ever increasing proportion of its customers. This withdrawal of discounted prices would not be possible if the retailer feared losing its customers as they switched to other retailers in search of better prices.

The portfolio model therefore suggests that if heavy discounting is observable in the market, then customers are *not* taking sufficient advantage of the opportunity to switch to another retailer. It also implies that if more customers did indeed search and switch to better market offers, then discounts would diminish in value (not increase as the conventional view suggests).  

The conventional view interprets Victoria’s persistently high rates of customer switching as a driver of competition which manifests itself in the form of higher discounts. In contrast, the portfolio model implies that although switching rates have remained stable in Victoria.

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22 In terms of the model developed in the accompanying paper, *An economic view of price discounting in the retail energy market*, higher switching rates due to greater customer sensitivity to price increases, would be reflected in higher values for the β parameter. In the limit, β would approach a value of 1 in which case the discounted price would converge to the price of unconditional market contracts.
for many years, the ongoing increase in discount rates suggests that retailers are becoming more adept at ‘de-discounting’ their portfolio of customer accounts.

Alternatively stated, the conventional approach sees high discounts as evidence of the success of the protection afforded by allowing customers to switch easily. According to this view, retailers are supplicated by their customers. In contrast, the portfolio model sees high discounts as evidence that switching is failing as a customer protection. Retailers are outgunning consumers in the contest over who will win the bet buried inside their market contracts.

Both views can’t be right. Which one prevails may be settled soon.

As shown in table 1, the proportion of customers remaining on discounted contracts at any point in time is falling. Indeed, at least as far as electricity is concerned, that proportion may now have fallen below 30 per cent in Victoria. If it falls any further, the proportion of customers on discounted market contracts will converge with the observed switching rate among household electricity customers — often cited as being between 25-28 per cent in Victoria. The convergence of these two rates may present a ‘natural’ barrier to how aggressively retailers can manage their portfolio of customer accounts. If the proportion of customers on discounted contracts were to fall below the switching rate, retailers would face having to remove at least some customers’ discounts almost as soon as they were offered. Surely, this would test the patience of even the most inert of customers.

Once aggressive portfolio management reaches its limits, retailers will no longer be able to offer ever higher headline discounts. We may have already reached that limit. Time will tell.

4.3 This is not price discrimination

Retail energy contracts are made between consenting parties and at least as far as customers are concerned, these contracts can be exited at any time and at low cost (particularly in Victoria where the cost of terminating a contract is regulated at $22). This flexibility means an astute customer can enter low priced contracts with ease and exit them just as easily if the retailer attempts to raise prices by any of the means outlined in this paper. This flexibility, guaranteed through regulation, is an important customer protection in the Victorian retail energy market.

According to this view, customers will sort themselves according to the contract that best meets their preferences. Customers who are price sensitive will seek well-discounted contracts and retailers can avoid “throwing money” at customers for whom price is a less important consideration.
Adherents of this view will see the retail energy market acting as markets normally act to reveal customers’ preferences. According to this view, retailers’ portfolio management strategies serve to sort customers into different categories depending on their willingness to pay. Once sorted, retailers’ will charge each customer group prices that reflect its willingness to pay. Or in economic terms: the market is separating customers according to their elasticity of demand and then price discriminating.

That’s just a fancy way of saying that customers who care enough about price to shop around for a better deal will get charged less than those customers who don’t particularly care (or at least not enough to shop around). From a retailer’s perspective there is no need to provide discounts to customers who don’t require them in order to hold on to their custom. Retailers’ commercial imperative is to provide the lowest possible prices only to the most footloose customers.

Economists refer to this type of activity as price discrimination. Importantly, price discrimination can be consistent with an efficient outcome. By charging some customers more, other customers pay less. Overall, this can mean that more customers are able to purchase more of the product than if a single price was applied to all purchases. Price discrimination is observed in many other markets.

The relevant question is therefore, whether price discrimination is acceptable and desirable in the retail energy market. We make the following observations.

- The purpose of price discrimination is to differentiate customers on the basis of their willingness to pay. It is not obvious to us that this is the consequence of the ‘sorting mechanisms’ currently operating in the retail energy market. Under current market contracts, customers are more likely to be sorted according to their ‘willingness to persevere’. Those customers most willing to persevere against efforts to reduce or remove their discounts will benefit. We have doubts about whether the ‘willingness to persevere’ is a reasonable or reliable proxy for willingness to pay.

- Even if we accept that the market is sorting customers according to their willingness to pay, the question remains: Is this consistent with the broader policy objective of the framework governing the retail energy sector? In Victoria (and nationally), a great deal of the legislation and regulation attends to the needs of customers of this essential service who may encounter payment difficulty. The policy concern is clearly with capacity to pay rather than willingness to pay. Price discrimination targets the latter. In so doing, it can (and probably does) greatly mis-target the overarching policy objective.

- Section 3.6 highlights various aspects of the modern retail energy market to which customers may be oblivious — most notably, the ‘gambling’ product embedded in the their supply contracts and the misalignment between their interests and those of their retailer. And we strongly doubt customers would be aware that their odds of ‘winning’
have lengthened in recent times. It is hard to fathom how price discrimination can be either efficient or fair in a market where customers do not have an adequate appreciation of the product being sold to them.

- Price discrimination is possible only in the presence of certain market features, most notably, no product resale and differentiable price elasticities. Clearly, the first of these conditions is satisfied. Customers purchasing discounted energy are not permitted to resell that energy to other customers. The second feature is potentially more germane. Energy use is often cited as being relatively inelastic. We think it unlikely that customers on undiscounted energy contracts systematically use more energy than customers on discounted contracts. That is, we do not expect there is a significant difference in the elasticity of demand between different groups of customers sorted according to whether they are on discounted contracts or not. Moreover, based on the modelling in this paper, it is very likely that customers are regularly slipping off their discounted prices. It seems improbable that this is because their elasticity of demand has declined. It seems unlikely that discounting (as a form of price discrimination) is being pursued to differentiate customers according to their elasticities of demand.

- Price discrimination may be efficient, but efficiency is not the same as fairness. Efficiency may or may not improve fairness. It depends on how the latter is defined. As an essential service, energy is a market from which customers cannot exit. Is it fair that customers ‘trapped’ in a market also face price discriminating retailers? That’s a matter of opinion, not analysis.

Price discrimination is an important characteristic of many markets but we do not accept it as an explanation for the pricing and portfolio strategies observed in the retail energy market.23

### 4.4 Stop blaming customers

Adherents of the conventional approach continue to urge customers to switch in search of a better deal. We have cited one regulator who has urged customers to shop around (section 2.7). Victoria already has one of the highest switching rates in the world and this high rate has persisted for many years. As we have written previously, it is not clear how much higher urgers of more switching require that it go if the objective is a highly competitive market.24 We continue to hold the view that competition manifests itself by the inherent, persistent and relentless striving of suppliers to outdo each other. It is driven forward by suppliers. It is not driven forward by customers switching between suppliers in ever growing numbers.

23 Appendix B looks at the related (but equally misplaced) argument of *caveat emptor.*

24 Ben-David (2015)
Based on the portfolio model presented in this paper, higher switching rates will provide the benefit of dampening the discount war and retailers’ excessive reliance on embedded ‘gambling’ products in energy contracts. While this may be a desirable outcome, we still reach the same conclusion as we did regarding the conventional view: How much higher do switching rates need to go?

We doubt there is an efficient answer to this question. In fact, we contend it is the wrong question.

It is the wrong question because, just as we objected to the question in the context of the conventional view, we continue to believe it wrongly and unjustly places responsibility for the effectiveness of the market at the feet of customers. In a truly competitive market, suppliers take responsibility for competition. Where the market is regulated, that effectiveness of that regulation will be measured by how well it mimics the normal disciplines of competition. Laying responsibility at the feet of consumers is not within the normal disciplines of competition. Simply urging more switching is not within the normal disciplines of competition. Other solutions are needed. In the retail energy market, those solutions involve a regulatory framework that more effectively supports the normal disciplines of competition.

The next section turns to a discussion of how these solutions might be effected.
5. The case for regulatory reform

5.1 Defining the problem

It’s too simplistic to look at the retail energy market and see more retailers offering more contracts, discounts of 30 or 35 per cent and switching rates of 25-28 per cent, and declare ‘mission accomplished’ as far as competition is concerned. Most if not all of the discounted market contracts observable in today’s retail energy market are probabilistic in nature. Pick a household customer at random and there is a surprisingly low probability that they will be benefiting from the headline discounts which are so widely publicised.

The probabilistic nature of energy prices arises from the evolution of retail market contracts into products that now combine an energy purchase with a gambling product. This development has emerged in recent years as a result of the rivalry between retailers to announce ever larger discounts — discounts which can only be achieved by retailers managing their portfolio of customer accounts to ensure fewer customers are benefiting from the headline discount rate. We have referred to this rivalry as an ‘arms race’ from which retailers cannot escape. An arms race is a form of the Prisoners’ Dilemma in which each party pursues its optimal strategy only to result in a suboptimal outcome for all parties. Tomes have been dedicated to finding solutions to this dilemma. Most solutions require an external authority to impose limits, costs or risks on the parties that alter their incentive to pursue their previously optimal strategies. We have already seen how this type of intervention led to the cessation of an earlier arms race in the retailer energy market.25

Arms races are futile and costly. They are futile because they rarely produce a winner; and whether they produce a winner or not, they entail the costly diversion of resources by all sides. We haven’t discussed these costs in this paper or modelled them in the accompanying paper, An economic view of price discounting in the retail energy market. We focus on price strategies rather than price levels. Although that modelling must await another day, it is self-evident that a ‘discount war’ that raises industry costs can be neither efficient nor consistent with the long term interests of consumers. And even more obviously, is cannot be in customers’ interests to have retailers pursuing outcomes that are diametrically misaligned with their own. Likewise, we cannot ignore pricing strategies (and the market rules that permit them) that lead customers to make decisions that may not be in their own best interests.26

How to respond to these undesirable outcomes is the regulators’ dilemma.

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25 Section 4.1 describes how a number of successful Federal Court actions by the ACCC led to the withdrawal of door-to-door marketing by the many (and the largest) energy retailers.

26 As discussed in section 2.6 normative economic theory suggests that customers should shun retail energy contracts that involve a gamble. That they don’t do so, suggests that alternative influences are at play.
5.2 From the prisoners’ dilemma to the regulators’ dilemma

This paper describes the pricing and portfolio strategies retailers have developed and are pursuing in light of the market rules and regulations presently in place. Of course, alternative rules and regulations will lead to alternative market outcomes for consumers. The question becomes: Which outcome is preferred? In the context of the thesis presented in this paper, it might be tempting to pose this question in terms of: What are the pricing and portfolio strategies that are acceptable for an energy retailer to pursue (and therefore, what rules and regulations need to be put in place to produce that outcome)?

This is a question with no objective answer. There are no means available for regulators to determine whether it is acceptable for retailers to move 10, 50 or 90 per cent of their customers off discounts. It might be possible to argue that an acceptable rate might be one that reflects the natural level of customer inertia. That is, if ‘X’ per cent of customers don’t react when discounts are withdrawn and their prices increase, then retailers should be allowed to balance their portfolios with that percentage of customers on undiscounted prices. Even if we set aside the methodological concern about how this percentage might be estimated, there is a more significant flaw in this argument. The rate of inertia is not purely exogenous. In all likelihood, it is a product of both nature and nurture.27 It derives from customers’ innate characteristics as well as the actions of retailers. Those actions have already been discussed in this paper.28

Any regulator who intervenes to limit retailers’ discretion over their pricing strategies (that is, the magnitude of the discounts they offer) or their portfolio strategies (that is, the balance of customers on different types of accounts) will forever be labelled:

THE REGULATOR WHO KILLED DISCOUNTS

While that opprobrium will be undeserved from most customers, there will be a small proportion for whom it will appear to be justified. These will be the wily and dedicated customers who, through their sheer force of will, have been able to remain constantly on discounted price offers. Even though the real outcomes experienced by most customers will remain largely unchanged, the regulator will stand falsely charged of undermining the competitiveness of the market. Perhaps this has been the UK regulator’s fate after its attempt in 2011 to limit the number of offers energy retailers could publish.29

While the UK regulator has borne the burden of its fate, other regulators have laid the burden at the feet of customers. As has been discussed in this paper, in Australia, regulators

27 See section 2.5
28 See box 2
29 For a full account, see Stephen Littlechild (2014).
have repeatedly urged customers to shop around for a better deal — implying that higher prices are the product of customers’ failure to take advantage of the market.\textsuperscript{30}

But the calculus is no longer that simple.

It is undeniable that customers in genuinely competitive markets are responsible for making their own choices in pursuit of their own interests. In those markets, the interests of suppliers and consumers are closely aligned; and when they come out of alignment, customers can ‘walk away’ from the market.

In the retail energy market, discounts are no longer discounts. They have morphed into gambling products that pit the interests of retailers against the interest of their customers. The interests of retailers and customers are no longer aligned — yet customers cannot ‘walk away’ from the market. After all, energy remains an essential service. And because it is an essential service, it remains subject to its own industry regulation with its own regulators.

When the interests of retailers and customers no longer align, energy regulators cannot remain on the sidelines. They cannot just standby merely urging customers to shop around for a better deal without taking responsibility for the outcomes experienced by customers. By virtue of being the market regulator, they are inevitably present in the markets they oversee and, as Thaler and Sunstein observed, anyone who is a party to a choice inevitably influences that choice.\textsuperscript{31}

In Victoria, the Essential Services Commission’s governing legislation requires it to promote the long term interests of Victorian (energy) consumers. The national energy objective in the National Energy Law is similar. This means that when the interests of consumers and retailers become misaligned, regulators are compelled to choose sides. They must pursue the interests of the consumer over those of the retailer. When the interests of the retailer become misaligned with those of the customer, then competition is failing. At that point, it is not within regulators’ remit to standby and merely tell customers to fend for themselves. Regulators must enter the fray.

But how?

\textsuperscript{30} See section 2.7 and section 4.2
\textsuperscript{31} See section 2.5
5.3 Distinguishing symptoms from causes

We do not accept the emergence of gambling products to be a ‘natural’ development in the retail energy market and therefore we consider they demand the attention of market regulators. The appropriate regulatory response does not involve banning these products. These products are the symptom of a deeper flaw in the market. Banning these products would simply invite these deeper flaws to manifest themselves in a different way — possibly in an alternative arms race.

In deciding how to respond, it is necessary to distinguish symptoms from causes. Solutions should seek to address the causes that have led to the ubiquity of these products and the poor customer outcomes to which they lead. Figure 4 presents the links between symptoms and causes discussed in this paper. The undesirable symptom (of poor outcomes for customers) can be avoided by successfully intervening at prior stages in the chain.

Seeking to regulate the make-up of retailers’ portfolios is not a viable solution. It may remove the misalignment of retailers’ and customers’ interests present in gambling products, but an intervention of this kind would represent an attempt to heal the symptom rather than its cause.

Intervening at the next level in the causal chain would involve seeking to regulate the emergence of gambling products. The advent of gambling products in the retail energy market poses challenges for regulators unaccustomed to dealing with such products. Should retail energy market contracts be regulated like other gambling products, say, with a regulated minimum payout rate? Should retail energy licences be granted on the basis of a licensee’s financial capacity to manage the risk involved with selling such products — that is, its ability to move customers off discounted rates? Of course, this would create a paradoxical regulatory responsibility where licences could only be granted to applicants who were satisfactorily adept at working against the interests of customers.

Intervening at the next level down the chain would involve regulatory actions designed to end the discount war arms race. We suspect at least some retailers may welcome such interventions. No-one benefits from the arms race but they cannot solve the prisoners’ dilemma by themselves. Section 4.1 discussed how although the ACCC’s interventions diffused one arms race (door-to-door marketing), but we suspect doing so only served to create the opportunity for a new arms race to spawn.

At the other end of the causality chain, lies the first cause — namely, the inescapable reality that energy remains an essential service. Customers cannot exit the market, even for some respite, no matter how dissatisfied they may have become with the service they receive or the price they pay. The day may be coming when technological advancements mean energy can be provided through a choice of sources and business models. When that day arrives,
there may be a case to argue that energy is no longer an essential service. Perhaps. But for now, it is an essential service and regulatory interventions cannot change that state.

Figure 4: From cause to symptom in the retail energy market

<table>
<thead>
<tr>
<th>Poor customer outcomes</th>
<th>(customers making sub-optimal decisions due to overconfidence, inertia &amp; induced inertia; and the way their choices are framed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misalignment of retailer and customer interests</td>
<td></td>
</tr>
<tr>
<td>‘Gambling’ products emerge</td>
<td>(eg. conditional contracts and discounts contingent on customers ‘reapplying’ for them)</td>
</tr>
<tr>
<td>Discounting becomes an ‘arms race’</td>
<td></td>
</tr>
<tr>
<td>Market is prone to ‘arms races’</td>
<td>(with costs borne by customers)</td>
</tr>
<tr>
<td>Competition is limited</td>
<td>(eg. to rivalry over market share rather than market growth)</td>
</tr>
<tr>
<td>Energy is an Essential Service</td>
<td>(so customers cannot opt-out of the market)</td>
</tr>
</tbody>
</table>

That leaves the second and third lowest links in the causality chain. These are: the limited nature of competition in the retail energy market and the tendency for the market to slip into arms races. These are inherent features of the market. The limited nature of competition flows directly from the essential nature of the service. That reality cannot be undone by regulation. In turn, the market’s proneness to arms races (where the costs are borne by customers) cannot be regulated away with any intervention short of price regulation.

We do not believe the shortcomings of the retail energy market warrant a rush to price regulation.

Price regulation is a ‘nuclear’ option that should not be considered lightly.
There is no doubt that the retail energy market has shown little innovation in the years since it was opened to full retail competition; and there have now been enough studies suggesting that unregulated prices have provided dubious benefits for customers.\footnote{Numerous studies have suggested the presence of inexplicably large retail margins being earned by energy retailers in the Victorian retail energy market.} Despite these shortcomings, exercising the ‘nuclear option’ and re-regulating the industry’s discretion to set prices would ensure there was no innovation. The market would become more staid than it is already and all responsibility (and blame) for dealing with disruptive technologies would lie with the regulator. Think taxis. Think Uber.

But nor do we accept that the way forward is limited to telling customers it is their responsibility (read: fault) if they’re higher paying prices because they failed to shop around. That is an unfair stance for regulators of an essential service to take. Likewise, simply reciting the neo-classical mantra about providing customers with more information doesn’t cut the mustard. The market is already awash with so-called, ‘information’ and information brokers (for example, switching sites) promising to lead the way through the miasma of market offers.

Even though competition in the retail energy market is limited, this does not mean that regulators ought to surrender to those limitations.\footnote{Ben-David (2015), (2016a) and (2016b)} The way forward must lie in better enabling customers (and regulators) to contest the market’s limitations; and where those limitations cannot reasonably be overcome by customers because of the one-sided nature of the market, then regulation should be deployed to ‘level the playing field’ on which customers engage with the retail energy market.

### 5.4 Other practical shortcomings of the retail energy market

While the previous discussion was conducted in somewhat abstract terms, we now recap the practical manifestation of these shortcomings in the retail energy market. We then turn to some proposed solutions in the next section.

1. **In-contract price changes.** Retailers can change the price paid by customers with little or no notice. This situation arises because contracts span multiple service and payment periods. To be clear, this conduct is permitted under the Victorian and national regulatory frameworks. There are no limits on how often, or by how much, prices can change in market contracts.

2. **Absolute discretion over roll-over pricing arrangements.** Retailers have an unfettered ability to reset the terms of any pricing arrangement made available to an existing customer when a market contract reaches the end of its term. Again, these arrangements are permitted under the relevant market rules.
3. **Price and other opacities.** We are not satisfied that customers fully appreciate the adjustable nature of the prices they pay and how they relate to the prices in their original contracts or the prices of their retailer’s more recent generally available offers (because their own contracts have ‘disappeared’).

4. **Meaningless units of measure.** Although the units of measure of energy (kWh and MJ) are well established, they remain largely meaningless to most customers. If customers have no clear impression of what they are buying then it is unclear how they are assessing value for money when entering a contract.

5. **Unanchored discounts.** As a consequence of the observation made in the previous dot point, customers have come to rely on headline discount rates a measure of an offer’s value. But as has been argued in this paper, discounts are no longer discounts. They are no longer reliable indicators of value.

6. **Flawed marker monitoring.** Regulators and other commentators have not kept pace with the evolution of pricing strategies in the market. Pricing reports remain focussed on generally available market offers even though it is now possible that only a minority of customers are paying these prices.
6. A plan for (re)aligning retailers’ interests with those of their customers

While we do not advocate the ‘nuclear option’ of price re-regulation at this stage, regulators must do more, and must be empowered to do more, to ensure the actions of energy retailers are aligned with the interests of their consumers. We propose five interventions to deal with the shortcomings of the retail energy market identified in this paper. The discussion reaches an ominous conclusion if these measures (and other possibly others) are tried and fail to align retailers’ actions with the interests of energy consumers.

I. Customers to be placed on the Nearest Matching Offer

One of the market shortcomings highlighted in this paper and the accompanying paper, *An economic view of price discounting in the retail energy market*, has been the process through which customers ‘disappear’ from the observable retail energy market. It is a cumbersome exercise for a customer who has disappeared to compare the cost of their energy with the cost of energy purchased under the latest generally available offers from their own retailer or other retailers. And, once a customer is invisible and their arrangements are free from scrutiny, it is much easier for retailers to ratchet up the prices being paid with reduced risk of losing the customer.

The case study in box 1 shows how a discount can be reduced or withdrawn entirely despite the customer continuing to honour the terms originally attached to the provision of that discount.

We consider that in the retail energy market, where contracts span multiple payments and can be rolled-over at the end of their term, retailers’ discretion to alter tariffs should be limited. This does not equate to a call for the re-regulation of prices. Rather, we propose that when a retailer seeks to alter the prices paid by a customer then the retailer should be limited to placing the customer on the ‘nearest matching offer’ that it has generally available at the point in time. For example:

- A customer who entered a 12 month contract with pay on time and direct debit discounts would, when being advised of roll-over arrangements as the end of that contract is nearing, be offered the nearest matching contract the retailer has published on its website. That is, the existing customer would be offered (and rolled on to) the same tariffs that a new customer would enjoy if they also agreed to pay on time and direct debit.

- The same approach would apply for a customer whose prices were being adjusted during the term of their contract. The retailer would be limited to changing prices to the prices shown against its nearest matching contract published on its website.
This approach would avoid customers disappearing as well as the ‘loyalty tax’ criticised last year by the Chief Executive of one of Australia’s largest retailers.\textsuperscript{34}

One variation on this proposal which we do not support at this stage would be too require the retailer to roll the customer on to a contract that is the ‘same or better’ than the nearest matching offer. We caution that this approach would, once again, see customers disappear from the market. We fear that this would just lead to a new arms race for all the reasons discussed above. How that arms race manifests itself is not something we are prepared to predict, however, we know with confidence that customers will bear the cost of that futile exercise in whatever form it takes.

II. All outcomes to be conveyed in terms of dollars-at-risk

Retailers’ marketing material focuses heavily, if not exclusively, on promoting their headline discount rates. As discussed in this paper, this appears not to have alerted customers to the true riskiness of these contracts. We contend that highlighting the nature of the gamble in terms of dollars-at-risk, rather than as a nebulous percentage, provides a better means for countering customer inertia and overconfidence. When an existing or new customer is presented with an offer, contract, contract variation or any other relevant material — retailers should be obliged to convey price impacts in terms of the dollars-at-risk.

- An existing customer whose tariffs are being changed either during the term of a contract or when an existing contract is being rolled-over, should be advised of the estimated dollar increase they are likely to face as a result of the new price arrangement. As far as existing customers are concerned, retailers would be required to estimate the customers’ usage profile based on past consumption.

- Alternative methodologies are likely to be needed for new customers where retailers may not have access to usage data. One options may involve the regulator developing some industry standards such as those used on Victorian water bills to show ‘typical’ household bills for different sized households. Retailers’ promotional material would be limited to publicising the total dollar cost of energy for these ‘typical’ households under their different contracts.

- Conditional contracts would be marketed as having two estimated prices — one where conditions are met and one where conditions are not met — as well as highlighting the amount ‘at risk’ in dollar terms (that is, the difference between the two prices). Using the example provided at the end of section 2.9, the retailer would be required to state explicitly that if customers fail to meet the conditions of the contract then their bills could be up to $619 higher (on an annual basis).

\textsuperscript{34} See section 2.5
III. Create an Energy Customer Code

For many years, the focus of economic regulation has been on ‘getting the market fundamentals right’. In other words, regulators have operated on the basis that if the market is designed properly it will serve the interests of customers without further ado from the regulator. This belief explains much about the form, content and tone of the regulatory apparatus governing the market. In Victoria, the primary regulatory apparatus guiding the retail energy market is the Energy Retail Code. It is an instrument that has been in place for over a decade but in 2014 it was ‘harmonised’ with the National Energy Retail Rules. These two documents are a peculiar assortment of regulatory obligations with which retailers must comply as part of their licences to operate (in Victoria); and under the National Energy Law applying elsewhere in the national energy market.

These are legalistic documents focussed on retailers and what they must do. There is no expression in those documents of why these obligations are required or what they are seeking to achieve. The provisions in the documents have no objectives or guiding principles. They are simply long, turgid lists of obligations. They are written for retailers and they are written at retailers. A customer who might be interested in their ‘rights’ in this regulated market, would find these documents unintelligible.

Yet all this regulatory apparatus supposedly exists in order to promote the long term interests of consumers. How is that possible if the regulatory apparatus remains focussed on ‘getting the market fundamentals right’ and treats consumer benefit as a derived outcome rather than a direct objective? Such an attitude implies, regulators know about best what is best for consumers.

These instruments need to be rewritten to put the customer at centre of the regulatory apparatus, not at its end. This can be achieved without any loss of regulatory focus on promoting efficiency.

In Victoria, the Essential Services Commission a reform of this nature in that part of the Energy Retail Code addressing payment difficulty. It has done so by:

- developing a set of cascading objectives for the Part and then each division and subdivision of the Part
- focussing each of these objectives on an observable customer-based outcome
- establishing a series of customer entitlements (to assistance measures) in line with the relevant objective, and
- specifying the customer entitlements as a set of minimum standards around which retailers can innovate and be flexible (provided it meets the applicable objective).
The overall effect of these reforms is to reorientate this part of the Code so that it is now about customers and customer outcomes, rather than retailers and regulatory compliance. These principles establish an approach that could be adopted to reform the entire document so that it was a customer-focussed: *Energy Consumer Code*.

Expanding this approach to the entire Code will help ‘future proof’ the protections afforded to customers — that is, they would no longer be reliant on notions of a supplier being licenced as a retailer, generator or distributor. New technologies and business models are already rendering these traditional classifications obsolete. *An Energy Consumer Code* could apply to any party with a customer supply arrangement.

IV. Regulators should be charged with monitoring the real market

These days, there is no simple answer to the question: *What is the price of electricity and gas?* Let alone the more important questions of: *Are these prices fair and reasonable? Are they efficient?*

At any point in time, the market is full of hundreds or thousands of prices (maybe even more). We suspect that only a fraction of these prices are visible. The rest have ‘disappeared’. They lie beyond scrutiny. For this reason, regulators and other interested parties have been limited to monitoring only the “generally available prices” published by retailers. Within that grouping, regulators have tended to limit themselves to monitoring the price of standard retail contracts and the price of fully discounted market contracts (when all conditions are met). These prices are unlikely to reflect the experience of most customers. In which case, such measurements have limited utility and provide little insight into the underlying dynamics of the retail energy market. Likewise, these prices are not properly representative when evaluating the retail energy market’s true state of competition or when attempting to assess the efficiency with which the market operates (for example, when analysing retail margins).

At a minimum, the regulator should be given explicit powers to gather data on prices actually paid by customers rather than just the prices published on government websites.

A more strategic response would be to charge the regulator with developing more realistic answers to questions about the price, reasonableness and efficiency of the retail energy market. It would be beneficial to provide the regulator with an explicit head of power in legislation to gather this information and if so, that head of power should be specified broadly — for example: *To monitor and report on the state of competition in, and the efficiency of, the retail energy market.*
V. A more realistic framing of the retail energy market by regulators

This paper, and the accompanying paper, *An economic view of price discounting in the retail energy market*, demonstrate the role regulators (and others) can play in framing how customers view and engage with the retail energy market. Traditional economics suggests that customers will rationally see the market for what it is, no matter what regulators have to say. Experiments from behavioural economics suggest otherwise. While we reject the suggestion that customers are acting irrationally, we do accept the proposition that how a choice is framed can cause customers to alter the decisions they make. Likewise, we are concerned about the effects of overconfidence bias, inertia and induced inertia. Customers should be assisted to have more realistic expectations about their own behaviours when engaging with the retail energy market.

The normative proposition from neoclassical economics (see section 2.6) suggests that customers should shun the ‘gambling’ products now being embedded in their retail energy contracts. Although we accept this neoclassical proposition, we also accept that the reason customers do not shy away from these products is because of the way the market is being framed. As discussed in section 2.7, regulators and others continue to cast the retail energy market as one where customers can pay a lower price if they shop around — with the implied message being that customers are responsible for their own losses if they fail to do so. Prospect theory suggests customers’ aversion to losses will see them favour the gambling products that more traditional economics suggests they should reject.

We are not suggesting that the regulatory message is solely responsible for the decisions customers make. That would be a rather wishful view of the ambit of regulators’ influence. However, we believe it is a contributing factor and it pervades much of regulators’ actions and attitudes towards the markets they monitor and regulate. Just one simple example was given in action IV above when discussing the emphasis regulators place on discounted market prices when reporting on the price of energy.

How the regulatory community might change its message, its mindset and its methods is beyond the scope of this paper but it is not beyond the scope of this paper to identify the need for that change.

*
While it is not yet time to exercise the ‘nuclear option’ of price re-regulation (in whatever form it might take), it is time to deploy all the remaining ammunition in the regulatory armoury for ensuring the actions of retailers are properly aligned with the interests of customers. Such alignment is the intended purpose of the five actions described above. If these actions (and possibly others) are tried and found to fail, then the nuclear doomsday clock should be allowed to tick forward and strike midnight.
7. Conclusion

The Victorian retail energy market has continued to evolve since it was opened to full retail competition at the start of the century. In its most recent incarnation, customers are offered discounts that are conditional on them meeting certain terms (such as paying on time) or contingent on them pursuing certain actions (such as phoning their retailer). Paying on time will save retailers costs, but nothing like the huge discounts currently on offer. And clearly, a phone call has nothing to do with the cost of supplying energy. It is a pure contrivance created to trigger the potential shift of customers on to higher priced contracts.

These contractual manoeuvres are the consequence of the ‘discount war’ in which energy retailers have now entangled themselves — an arms race which is only possible because energy is an essential service. And because it is an essential service, retailers can simply pass the costs of the arms race to their customers who have no choice but to bear them.

The arms race drives retailers to announce ever higher headline discounts on their market offers. This paper highlights how this race for higher discounts means that retailers have had to become increasingly aggressive in how they manage their portfolio of customer accounts. This aggression has seen market offers morph into contracts that now combine energy supply with a gambling product. A discount is no longer a discount. A so-called ‘discount’ is now a bet.

But these bets are not like bets in other markets. The outcome is endogenous to the actions of the contacted parties. As a result, retailers’ objectives are now in conflict with those of their customers. Unlike other goods and services markets, the interests of suppliers and consumers in the retail energy market are no longer aligned. In fact, they are diametrically opposed as each side does what it must to ‘win’ the bet. But are customers and retailers battling to win the bet on a level playing field? We don’t think so.

Regulators cannot stand by idly if their statutory objectives require them to promote the long term interests of consumers. They face a high burden of responsibility than that. They cannot offload that responsibility to customers by merely telling them to ‘shop around’. They cannot retreat to the safety of their offices and they cannot assume that customers are best served by letting the market ‘do its thing’ when that thing has pitted retailers against customers. Regulators must seek to restore alignment by placing retailers and customers on a ‘level playing field’. This does necessarily imply the need to re-regulate retail energy prices. That ‘nuclear option’ should only be exercised when all other options have been exhausted. And there are other options.

This paper identifies five actions that can be implemented now. We are confident that if these measures are implemented rigorously, they can bring back into alignment the interests of energy retailers with the interests of their customers. It will put an end to the
arms race currently underway. It will restore a more genuine form of competition and it will facilitate more efficient outcomes in the retail energy market. And if those efforts are tried and found to fail then the time might have arrived to reach for the nuclear codes.

— END —
APPENDIX A: How customers ‘disappear’ in the retail energy market

How many customers are on published offers? There is no data publically available to answer this question but as the analysis in this paper suggests, the proportion maybe decreasing over time. We refer to customers who are paying charges that differ from those published by their energy retailer as having ‘disappeared’ from the retail energy market. While they are obviously still purchasing their energy in the market, the prices they are paying are no longer observable or subject to third party scrutiny. When customers ‘disappear’, the price they pay is completely invisible to the regulator, competitors and other customers. We’ve identified numerous invisible contract types where price movements are possible without any market visibility. These include:

**Closed offers.** These are contracts that were once offered by the retailer but have subsequently been withdrawn from sale. Customers who purchased these contracts when they were available, will still be on these contracts but have no independent means by which to confirm whether the retailer is still honouring all the terms of that contract — most notably, the effect of any promised discounts.

**Amended contracts.** One of the unique features of energy contracts is that retailers can unilaterally amend tariffs at any time within the life of the contract subject to some minimal notification requirements. To the extent that this affects any contract that is not currently available in the open market, price movements will be invisible to third party observers.

**Special offers.** Retailers may, from time-to-time, develop tailored products that they market to a select group of customers. These may be customers identified as having very particular energy needs or the offers may simply be marketing devices targeting a readily identifiable group of potential new customers (for example, members of the local football club). Where these offers are made and accepted “off market”, the prices they entail will be invisible to the general market.

**Retention offers.** When retailers become aware that a customer is about to switch to a competitor, they will often make contact and seek to entice the customer not to move to another retailer. The terms of offered may or may not bear any resemblance to the published offers available to other customers.

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35 Ben-David (2016b)
**Roll-over arrangements.** Most market offers are for terms of 1 or 2 years. Contracts will specify what will occur at the end of the contract’s term. In keeping with regulatory requirements, the contract will explain that the retailer will endeavour to contact the customer and outline how the customer will be rolled-over to another contract in the event that the customer does not respond to the retailer’s advances. There are no regulatory specifications regarding the nature of the roll-over tariffs on to which customers can be placed.

And the market continues to innovate...

**Profiled offers.** With the advent of new technology, particularly smart meters, retailers have access to more information than ever before about the usage patterns of each customer. This enables them to develop offers uniquely suited to each customer’s consumption profile. By definition, these contracts are not ‘generally available’ and so have no general visibility.

**Bundled offers.** With the expansion of ‘energy’ as a product, retailers may include a broader suite of goods and services. These might include: solar panels, batteries, energy efficient appliances, energy management services and who knows what else in the future. To the extent that the price of these services are bundled with the price of the energy being supplied, the price of that energy may quickly become invisible.

It may be argued that customers ‘disappear’ in other markets as well. For example, one customer doesn’t know what another customer has paid for a car or a plane ticket. In the case of the car purchase, each customer negotiates the best deal they can. The outcome will differ according to each customer’s negotiating skills. In the case of plane tickets, airlines use dynamic pricing models. The prices paid by different customers will depend on the timing of their respective purchases. In these markets, we are not concerned that customers pay different prices for the same good or service; nor are we concerned about the lack of transparency around the price of those purchases.

If we are not concerned with differential pricing in those markets why should we be concerned with price discrimination in the retail energy market (and retailers’ use of strategies to make customers disappear in order to support their efforts to price discriminate)?

These issues were addressed in section 4.3.
APPENDIX B:  Caveat emptor or Caveat regulator

Section 4.3 responded to the argument that discounting merely reflects retailers’ efforts to price discriminate their customers according to the willingness to pay. Two related arguments include: the limits of caveat emptor, and how markets operate in theory versus how they operate in practice.

Caveat emptor

Caveat emptor is a well-established principle in competitive consumer markets.36 In the retail energy market customers are afforded protections through the general consumer law as well as industry specific regulation. Although these additional protections narrow the need for caveat emptor, they certainly do not eliminate it.

We contend that there are features of the retail energy market that weaken customers’ ability to exercise the caution assumed by the principle of caveat emptor and that the additional protections afforded through the regulatory framework are not sufficient to compensate for these constraints on caveat emptor. These constraints include the following.

- As described in sections 4 and 5, energy is an essential service meaning customers cannot exit the market. They cannot impose the ultimate consumer sanction of walking away from the market no matter how dissatisfied they might be. The customer knows this limitation applies to them. The customer’s retailer knows this limitation applies to the customer; and every other retailer knows that this limitation applies to every customer. As described elsewhere, this must surely ‘tip the playing field’ against the interests of the customers.37 Customers capacity to exercise caveat emptor effectively may be compromised when they are already at a market disadvantage.

- Retail energy contracts differ significantly from transactions in other consumer markets. In most consumer markets, entering a contract (whether written or implied) aligns directly with making a purchase — that is, one purchase per contract. When that occurs, consumers confront caveat emptor each time they make a purchase. Retail energy contracts are different. They involve repeat purchases under a single contract. In the case of evergreen contracts, these purchases continue indefinitely. This weakens the link between caveat emptor (which is we can expect to be exercised when a customer enters a contract) and purchases subsequently made under that contract. Alternatively stated,

36 The principle that the buyer alone is responsible for checking the quality and suitability of goods before a purchase is made.
37 Ben-David (2015)
energy customers can’t be expected to conduct due diligence each time they pay a bill unlike, say, petrol customers who are more likely to keep an eye on prices each time they refill their vehicles.

- The retail energy market also differs from other markets insofar as customers cannot diversify the risks they face when entering a contract. Customers cannot enter into multiple supply arrangements. At any point in time, a customer is locked into a single supply contract with a single retailer (one for electricity and possibly another for gas). In other words, even when exercising caveat emptor, customers have fewer opportunities to manage the risks they face when entering a retail energy contract.

- We think it highly doubtful that customers fully understand that energy retailers have added a gambling component to their market contracts — and that therefore retailers’ interests are opposed to those of their customers. This does not suggest that product disclosure statements are not provided dutifully, rather, this information may not be enlightening customers about the true nature of the relationship with their retailer. It is not clear how a consumer can be expected to exercise the necessary caution under the principle of caveat emptor if they do not fully understand the nature of the transaction over which that principle presides.

- In section 2.7 we described how regulators may, at least in part, be responsible for framing the market in such a way as to encourage customers to enter market contracts entailing a gamble. Those gambles are getting larger and the odds of winning are getting longer. Unlike neoclassical economics, behavioural economics holds that consumers’ decisions are the product of how choices are presented to them. By definition, regulators are also exercising influence over those choices. In which case, where does the boundary lie between caveat emptor and caveat regulator?

There is no doubt that caveat emptor applies in the retail energy market despite the additional customer protections afforded in that market. Even so, the expectations it places on customers may not be fully fair given the unique features of the retail energy market.

**Theory versus practice**

The regulatory framework provides customers the opportunity to enter and exit contracts with ease and at low cost. This mobility is held to impose a competitive discipline on energy retailers who will be compelled to vie for footloose customers. This feature of the regime is predicated on customers’ sensitivity to prices and their willingness to incur the necessary effort (and cost) to exercise the discretion provided to them.

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38 See Ben-David (2017) for a more detailed account.
Survey after survey has challenged whether customers do indeed behave this way. For example, in its 2015 survey of customers, the AEMC found that around half of Victorian electricity and gas customers had not switched retailer or plan in the last five years.\textsuperscript{39,40} And of course, this paper estimates that 60-70 per cent of customers may no longer be paying discounted prices.

It would seem that customers are not chasing better offers with the rigour that is anticipated by the regulatory framework. Observed practice does not appear to align with assumed theory. This appendix does not explore why there is a disparity between theory and practice but it contends that if customers are not acting as the theory suggests, then either customers are wrongheaded or the theory must be misplaced.

It might be worth reminding ourselves of what Adam Smith had to say in the \textit{Wealth of Nations} (1776):

\begin{quote}
“Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer.”
\end{quote}

Smith continues:

\begin{quote}
“The maxim is so perfectly self-evident that it would be absurd to attempt to prove it.”
\end{quote}

So, we don’t intend to try. Instead, we imagine that Smith would never have argued that customer behaviour ‘in theory’ prevails over their observed actions ‘in practice’. As a friend and mentor of the author’s once advised:

\begin{quote}
“If it works in theory but not in practice, then find another theory.”
\end{quote}

Theory and practice do not align in the retail energy market. Consumers do not behave the way the theory would have them behave. And, as a consequence, retailers do not behave the way the theory would have \textit{them} behave. Despite the seeming competitiveness of headline discount rates, the prices paid by a majority of customers are not bound by the theoretical disciplines upon which this price-deregulated market is predicated.

If the theory underpinning the regulatory framework does not align with the customer behaviour observed after 15 years of practice, then the theory must be revisited — and if

\textsuperscript{39} Australian Energy Market Commission (2015)
\textsuperscript{40} Also see: Energy Consumers Australia (2017)
the theory must be revisited then so to must the operation of the regulatory framework which sits atop that theoretical view of the market.
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An economic view of price discounting in the retail energy market

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28 February 2017

Submission to: Review of electricity and gas retail markets in Victoria
ABSTRACT

Full retail competition was introduced in the Victorian retail energy market over 15 years ago when entry and price controls began to be eased. By 2009, all forms of price regulation came to an end. Since then, the retail energy market has evolved according to its own dynamic. Today’s market is marked by retailers offering customers very large discounts. Discounts of up to (and exceeding) 35 per cent are now normal and the proliferation of such heavily discounted offers is often held as proof of the market’s competitiveness.

The emergence of such large discounts challenges the conventional wisdom that energy retailers’ share of a typical energy bill lies between 12 and 15 per cent. Retailers’ net margin will be even lower once their operating costs are deducted from this share of revenue. This paper seeks to understand the discrepancy between retailers’ margins and the discounts they offer.

Using various economic precepts from the neoclassical tradition as well as the newer field of behavioural economics, this paper demonstrates that such discounts can only be possible under certain conditions — conditions that are not favourable to consumers. Using a simple portfolio pricing model, expected utility theory and prospect theory, the analysis presented below highlights how the modern retail energy market pits retailers against their customers. The interests of the parties are opposed. For one party to ‘win’ the other must ‘lose’. This outcome sits in contrast to other competitive markets where the interests of the parties are aligned and the best outcome is the one that best serves the common good.

This paper contends that customers seeking to manage their energy costs are now required to ‘bet’ against their retailer, with the present market delivering:

Bigger bets with more for customers to lose than to win and with the chances of ‘winning’ seemingly diminishing each year.

Indeed, the analysis suggests fewer than 30 per cent of household electricity customers may be winning the bet in today’s market. Alternatively stated, over $\frac{2}{3}$ of customers may not be benefiting from the headline discounts seemingly on offer in the retail energy market.

While this paper focuses on the economic foundations of these findings, an accompanying paper, Do discount wars benefit retail energy customers? Don’t bet on it, explores the implications of these findings for customers, the state of competition and regulators. That paper also proposes a number of regulatory interventions to restore alignment between the interests of retailers and their customers.
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APPENDIX A: THE NUMBER OF RETAILERS AND THEIR MARKET SHARE
1. INTRODUCTION

In the early 2000s, full retail competition was introduced in the Victorian retail energy market. Over the next few years, prices were gradually deregulated until January 2009 when the last vestiges of price regulation were removed. The pricing strategies pursued by energy retailers have evolved over that time. Today, customers have access to market contracts that entail discounts than can be up to (and even exceeding) 35 per cent off the cost of their energy use. These discounts are invariably conditional on the customer agreeing to meet certain terms. Most notably, customers are expected to pay on time and arrange for their bills to be paid via direct debit. Some retailers now also require paperless billing (that is, online billing of customers).

Retailers, regulators and other commentators often cite the availability of discounted contracts as a sign that the market is delivering benefits to customers. Regulators and others often refer to the price of discounted market offers when benchmarking the price of energy and assessing the movement in price from year to year.

To date, there has been little economic analysis of these discounts and whether they are in the long term interests of consumers. This paper examines the discounting strategies of retailers, the viability of the discounts on offer, the consequences for consumers, the decisions consumers are making and the role of regulators in shaping the market.

The advent of such heavily discounted contracts is puzzling. The conventional wisdom holds that the retail component of an average energy bill is around 12-15 per cent. From this amount, retailers must meet all their costs and what remains is available to be paid as a return to their owners. But if retailer profit is only a few cents in the dollar collected from customers, how can they possibly be offering discounts as high as 25 or 35 per cent?

This paper commences with a short history of the retail energy market in Victoria. It then uses a simple portfolio model to shed insights on retailers’ pricing strategies and how these have evolved over the past few years. Having developed a theoretical model, the paper then undertakes an empirical analysis of observed prices to reveal the pricing strategies that energy retailers may be pursuing in the Victorian energy market. The paper then applies expected utility theory to assess the choices facing consumers confronting these retail pricing strategies. While this normative approach from economics provides helpful insights, it requires some relaxation of the standard assumptions supporting the model. Behavioural economics, particularly prospect theory, provides further useful insights into the decisions we observe customers making in the retail energy market. It also highlights the role that regulators and policy makers may be playing in influencing customers’ choices in the market. The significance of these findings for customers, retailers and regulators is then discussed.
The models developed in the paper are simple expositions of the economic theories on which they rely. The results they produce should be read as demonstrative rather than definitive. The importance of this analysis is therefore the light it sheds on broad developments in the retail energy market, the need for further analysis and consideration of the appropriate regulatory response if the long term interests of consumers are to be promoted.

The paper proceeds as follows. Sections 2 to 4 provide a short history of the Victorian retail energy market and retailers’ pricing strategies. Section 5 develops a portfolio pricing model of retail energy markets and uses the model to shed light on the behaviours of retailers and customers. Section 6 takes a further look into the impact of these retail pricing strategies on consumers while chapter 7 uses the model to undertake an empirical analysis of the market. Chapter 8 introduces expected utility theory while chapter 9 turns to behavioural economics and prospect theory. Chapter 10 concludes the paper.
2. **A SHORT HISTORY OF THE VICTORIAN RETAIL ENERGY MARKET**

In 2001, Victoria moved to Full Retail Competition (FRC) adopting two separate (but similar) codes for electricity and gas sales, respectively.

By and large, these codes reflected existing protections for customers from earlier instruments but sought to include provisions accounting for the opening of the market to competition. At the time, the prevailing view was that customers entering the nascent competitive market would be sufficiently ‘protected’ by the discipline the competitive market. Therefore, much of the codes (and the preceding legislation) was committed to preserving protections for customers who did not enter the new competitive market. These customers were deemed to be on Standing Offers (now known as Standard Retail Contracts).

There was a great deal of faith that a customer who entered the market would find a better deal. It was assumed that these customers needed lesser protections because poor treatment would see a customer switch to an alternative retailer. Fear of losing customers would ensure retailers vied to attract and retain customers through attractive market offers (now known as Market Retail Contracts).

In the intervening years, the growth in the number of retailers, the decreasing market share of the three incumbent (or ‘Tier 1’) retailers and the rate of customer switching between retailers have been interpreted as signs that a competitive market had taken hold and is working. (See Appendix A for further information about the number of retailers and their market share.)

In 2005, the Commission moved to merge its separate codes for electricity and gas retailing into a single instrument which was to become known as the Energy Retail Code (ERC). In large part, the new unified code adopted the provisions of the earlier codes while seeking to make the provisions consistent across electricity and gas. Some customer protections were either clarified or strengthened.

From time to time, the Code was amended by the Commission to reflect developments in the market or more often, new obligations in legislation or Ministerial Orders.

In anticipation of the States adopting a single set of regulatory provisions nation-wide, work began among the States and Commonwealth on developing a National Energy Customer Framework in the mid-2000s. The Victorian code was seen by consumer groups as the most comprehensive framework among the States, and it was used as the basis for negotiating the development of the new national framework. Work on the National Energy Retail Rules (NERR) was finalised some years later. Its form and structure differed from the Victorian Code and numerous Victorian protections were not included in the new national rules.
It was expected that Victoria would be the first State to adopt the new NERR and transfer responsibility for its administration to the Australian Energy Regulator which is established under State legislation and funded by the Commonwealth Government. Provisional timelines were set for the transfer to take effect but as each deadline approached, the transfer was postponed. The last date for the transfer to the NERR was on 1 July 2012. Three weeks before that time, the then Victorian Government announced that it would not proceed with the transfer. No future date was specified.

There were multifold reasons why the transfer did not proceed. It is not the purpose of this paper to recount the reasons that governed this decision.¹

On announcing on 13 June 2012 that Victoria would not be proceeding to the NECF, the Government nonetheless committed to ‘harmonising’ the Victorian regulatory framework with the national framework. The Commission was asked to undertake this task. In doing so, the Government requested that the Commission take into account the legislative provisions of the National Energy Retail Law (Victoria) Bill 2012. This Bill would have enlivened the NERR in Victoria. Importantly, it also contained a series of derogations that would have retained a number of the protections that were in operation in Victoria but were not present in the NECF.

As the Commission commenced its review into the harmonisation of the Victorian Code with the national framework, it soon became apparent different interpretations were given to this commitment. Energy retailers interpreted the Government’s commitment as suggesting the Victorian Code would be made identical to the NERR. Consumer groups interpreted the Commission’s task as taking the NERR and reinstating all Victoria’s protections that had been removed during the development of the national regulations.

The Commission sought policy clarity and was advised the appropriate interpretation of the Government’s commitment involved taking the NERR and adding those protections that would have been preserved by the NERVLA (had it been enacted). This represented a position that fell somewhere between the interpretations of the retailers and consumer groups.

It soon became clear that, although the Government’s policy intention was very clear, the ‘devil was in the detail’ when it came to its implementation. After two years of often tense consultation with industry and customer groups, the Commission adopted the Energy Retail Code Version 11 (ERC v.11) which came into effect in October 2014.

While from a structural point of view ERC v.11 looked very different from its predecessor, there were no dramatic consequences for retailers or customers arising from its adoption.

¹ During this period, and under the auspices of Victoria Government policy, smart meters were rolled out to every electricity customer in Victoria. The universal roll out of smart meters did fundamentally alter the potential for market developments in Victoria compared to the other jurisdictions in the National Electricity Market.
After all, Victoria had just harmonised its Energy Retail Code to, what in effect was, a more recent version of itself (in the form of the NERR). The harmonisation project did not seek to assess the necessity or the efficiency of the Code’s various provisions. Nor did the harmonisation project assess the effectiveness of the Code (or the NERR) in responding to the modern retailer energy market.

In mid-2014, under a terms of reference from the Government, the Commission commenced a review into the rate and cause of energy disconnections in Victoria. Following a change of government later that year, the terms of reference were revised to focus on hardship — the practices of energy retailers, outcomes for customers, and the effectiveness of the regulatory framework in ensuring that disconnection was a measure of last resort by energy retailers.

The inquiry concluded in February 2016. The Government accepted its findings and requested that the Commission begin work on amending the Code to implement its findings.
3. EVOLUTION OF RETAILERS’ PRICING AND MARKETING STRATEGIES

Price deregulation began with the introduction of Full Retail Competition (FRC). Before this time, prices were fully regulated by the Essential Services Commission. With the introduction of FRC, prices were deregulated for market offers (now known as Market Retail Contracts, MRC). While the Commission still regulated the price of standing offers (now known as Standard Retail Contracts, SRC), retailers were free to offer lower prices through their Market Retail Contracts.

From 1 January 2009, all price regulation in Victoria ceased. Since that time, retailers have been fully responsible for setting the prices of their Standard and Market retail contracts without any regulatory oversight (other than through an annual pricing report produced by the Commission).

It is worth reflecting on different, broad phases in the pricing of market contracts since price deregulation.

Phase 1. Little changed in the structure or level of prices immediately after full price deregulation. Standard contracts were generally priced at their previous regulated level and market contracts continued to be offered at a small discount to the price of those standard contracts — say, up to about 5 per cent. Market contract were typically offered for 2 to 3 years.

Phase 2. Over time, retailers started to increase the price of their standard contracts and increase the discount available through their market contracts to, say, around 5 to 8 per cent off the price of a standard contract.

Phase 3. The next innovation in pricing strategies was to introduce conditional discounts whereby anyone entering a market contract could receive a total discount of around 10 per cent. The discount now consisted of two parts: an unconditional discount of 5 per cent off the standard contract price; and an additional discount of, say, 5 per cent if the customer also met certain conditions. Typically, the conditional discounted related to paying the bill on time (known as a ‘pay on time’ discount) or agreeing to bill payment via direct debit arrangements, or both. The price of standard contracts continued to increase to make room for these additional discounts.

Phase 4. Over the next year or two, unconditional discounts began to shrink and disappear. Larger discounts were now made fully conditional whereby the customer either met the conditions in full or received zero discounts. Over time, the full value of discounts increased
to a maximum of up to 15 per cent or more. Some retailers began offering multiple contracts whereby customers could choose between different discounts.\textsuperscript{2}

\textit{Phase 5.} Over the last year or two, the discounts offered have continued to increase with many market offers now involving discounts of 25 to 35 per cent. Some discounts apply to the total bill while others apply to the retailers’ usage charges only. These discounts are all conditional on customers paying on time and establishing direct debit arrangements. It is also notable that contracts lengths have typically shortened, with many contracts now offered for only one year. Conversely, many other offers are being made available as ‘ever green’ contracts, that is, the contract is ongoing until terminated by the customer (for example, by switching to another retailer). Another emerging development appears to be a decoupling of the price of undiscounted offers from the price of standard contract prices. So while some retailers advertise discounts of say 25 to 35 per cent, the discount is not anchored against any objectively verifiable measure. In other words, failing to meet the requisite conditions may now see a customer paying prices that exceed those that would be paid under a standard contract.

To be clear, these five phases are descriptive only and they are only presented to highlight broad trends in the market rather than specific periods. Phases may overlap and some retailers may still be offering market contracts that are better described by earlier phases. Nevertheless, the trends described above can be seen when looking at pricing reports produced by the Commission (and other price analysts) over the course of the last few years.

3.1 \textbf{Can the emergence of very large discounts be explained?}

There are a number of interesting observations worth considering in light of the trend in retailer pricing strategies.

First, despite the burgeoning headline value of the discounts on offer over the last few years, nothing has changed in terms of the product or service being sold to consumers. The electrons (or amps) and gas molecules being delivered today are no different from the ones that were delivered in 2009. Similarly, the electrons (or amps) and gas molecules being delivered to customers who meet their conditional discounts are indistinguishable from those delivered to customers who do not meet these conditions. The increasing differentiation in an individual retailer’s prices has no correspondence with variation in the quality (or quantity) of the product or service being delivered. In this sense, price variation is completely contrived. It bears no relationship whatsoever to the product or service being delivered. This compares to other markets where discounts usually reflect some change in

\textsuperscript{2}In practice, the difference in terms and conditions were not material and discounts were anchored off the same undiscounted price (ie. standard contract prices) — therefore, it’s not clear how these multiple contracts benefited customers.
the product: for example, a fashion store discounting clothes that are ‘out of season’ or a food store discount produce that is reaching its ‘use by date’.

Second, pay on time discounts are extraordinarily generous by any objective measure. Undoubtedly, having customers pay on time saves on retailers’ working capital requirements but even at the most usurious borrowing rates these working capital costs would not come anywhere near the discounts being offered. Even if we add a retailer’s costs of ‘chasing’ unpaid accounts to the holding costs of waiting for a bill to be paid, it is hard to believe that the retailers’ costs would match the value of the pay of time discount now being offered.³ (And the gap is even larger when we take into account that most customers pay their bills on time or within a few days of the due date, thereby lowering a retailer’s average holding costs.) It would appear that the very large discounts available in the market are only loosely related to the financial benefits available to the retailer in return for those discounts.

Third, the increased complexity of retail offers greatly increases the information a customer requires in order to choose a good (or indeed, the best) deal for their circumstances. In earlier phases, where the structure of discounts was very simple, it is even arguable that the customer required no information. That is, a customer could choose a retailer at random and enter into a market contract and be confident of paying prices that were broadly competitive. Why? In the early days, there was only one dimension to discounts and competitors could easily observe each other’s market offers. Under those conditions, competition would ensure that no individual retailer strayed too far from the ‘pack’. A customer choosing a retailer at random was unlikely to result in a price outcome that was significantly worse than any other choice the customer may have made.

With the increasing complexity of the offers in the retail energy market, customers could no longer rely on a simple (and even random) choice to deliver them a favourable outcome. In the more complex — or some may say, more “sophisticated” — market, customers must gather considerable information before making a choice. While retailers’ marketing strategies rely heavily on publicising their headline discounts, customers also need to be able to assess:

- which components of the bill being discounted
- the base price to which that discount will be applied
- the term of the discount and what succeeds it at the end of the contract
- the circumstances (or conditions) in which the discount will be withdrawn

³ Note, late payment fees are banned by legislation in Victoria, therefore holding costs cannot be recovered directly from the customers who give rise to those costs.
• the circumstances under which the base (or undiscounted) price is changed, and
• the customer’s consumption pattern.

With so many variables to consider, the likelihood of a customer making a ‘wrong’ choice increases greatly. What does ‘wrong’ mean in these circumstances? We take wrong to mean that, over the life of their relationship with their retailer, the customer pays significantly more than they might have otherwise paid had they been more fully informed about all of the above parameters before entering the contract.⁴

According to the Victorian Government’s energy information website (switchon.vic.gov.au):

“91% of people who compare can save” and

“More than half of Victorian Energy Compare visitors could save $330 per year”.

It would seem that in today’s complex retail energy market, requiring customers to process so many parameters, there is very significant likelihood that customers will make the ‘wrong’ choice. As shown below, the strong likelihood that customers make ‘wrong’ choices or accept ‘wrong’ outcomes is an important determinant in explaining the pricing strategies of retailers.

⁴ We could add the opportunity costs of the customers search and analysis time to this definition of “wrong”.
4. MOVING BEYOND RETAIL MARGINS AND ON TO RETAILER PRICING STRATEGIES

Numerous analyses have now been produced that suggest that retail energy margins in Victoria may be higher than would be expected in a competitive market. Analyses by the Australian Energy Market Commission, the Essential Services Commission, the Brotherhood of St Lawrence, St Vincent de Paul and CME Australia have all drawn attention to the same finding. Retail margins are inexplicably high in Victoria. Each analysis adopts its own methodology. Despite these differences, they all reach the same conclusion.

Often these studies end with a question about the competitiveness of the energy retail market and questions about whether it is as competitive as is often claimed. Such questions are not easy to answer. Competition is not a ‘yes or no’ proposition. There can be no dispute that the Victorian market is contestable. There can similarly be no doubt that retailers vie for custom. One need only look at any form of media to see retailers vying for custom. What is less clear, and what these studies really throw into question, is whether the extant level of competition is sufficiently powerful to drive the market towards an efficient outcome. There should be no excess retail margins (or ‘economic rents’) in an efficient retail energy market.

This paper sets aside the debate around retail margins. Instead, it focuses on the discounts available in the retail energy market.

In doing so, this paper does not attend to questions about the absolute level of prices observed in the market and whether these prices include an economic rent. The focus of this paper lies in analysing the different contract types and their prices. Examining prices in this relative sense sheds light on retailers’ pricing strategies which then enables a discussion about whether these strategies are in consumers’ long term interests.

The following section adopts a portfolio pricing model. A stylised model is established initially in order to demonstrate the consequences for retailers’ pricing strategies. The model is then used in later sections as the basis for an empirical analysis of the Victorian retail energy market.
5. A PORTFOLIO APPROACH TO MODELLING THE RETAIL ENERGY MARKET

The conventional wisdom has held that the retail margin on a typical energy bill is roughly 12 to 15 per cent — that is, of every $100 paid by customers to retailers, $85 is required to cover the wholesale cost of the energy plus the costs of delivering that energy via the transmission and distribution networks. From the remaining $15, the retailer must meet its:

- operating costs (eg. operating its billing system)
- policy obligations (eg. buying renewable energy certificates), and
- its regulatory compliance obligations (eg. assisting customers in payment difficulty).

What remains represents the retailers’ net margin.

For the purpose of the following analysis, we assume that retailers’ net margin is in the order of $5 per $100 of revenue collected from customers. That is, retailers make a net margin of 5 per cent on the funds collected from customers in order to meet the required rate of return on shareholder funds. We stress this figure is an assumption only as we do not have access to direct evidence of retailers’ net margins on their retail operations. Whether the true rate is higher or lower does not alter the conclusions of the analysis that follows.

A net margin of $5 per $100 of revenue collected, even if it is wrong by a factor of 50 or 100 per cent, is clearly much smaller than the discounts currently available in the market. As already discussed, currently discounts can extend to 35 per cent or higher (i.e. $35 per $100 of revenue collected). This raises an interesting question: How can retailers afford to offer such large discounts off their market contracts?

To answer this question, we need to develop a model that reflects a retailer’s portfolio of customer accounts. With the proportion of household customers on standard contracts now in single digits, we will set these contracts aside and focus solely on market contracts. We assume that there are two types of market contracts available to customers. The first type of offer involves a simple market contract where no discount is available. The supply and usage charges are known and fixed.

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5 For example, in its 2016 Residential Electricity Price Trends report, the AEMC notes (i) competitive market costs (which consist of wholesale costs and retail costs) account for 40-50 per cent of the total price (p.ii), and (ii) wholesale costs comprise 70 per cent of competitive market costs (p.iv). Together, these figures suggest that 12.15 per cent of the end price can be attributed to retail costs.

6 Arguably, standard contracts can be set aside completely if the higher price of these contracts simply reflects the higher cost to retailers of maintaining the ‘grandfathered’ protections established at the commencement of full retail competition.

7 The supply charge is the cost per day charged by retailers irrespective of the quantum of electricity or gas consumed by the customer. The usage charge is the retailer’s price per unit of energy consumed by the customer.
conditional discount — that is, a contract where a discount may or may not be applied, depending on whether the customer meets the conditions required by the retailer in order to honour the discount it has offered. These contracts can therefore exist in two states: one in which the discount is honoured and one in which the conditions for a discount are unmet (and so the undiscounted price applies).

The following analysis initially models the return on the second type of offer, namely, the conditionally discounted market contract. (The significance of the first type of contract, in which no discounts are offered, becomes apparent in section 6.)

The retailer’s portfolio can be represented as:

\[ P_{AV} = \beta P_D + (1 - \beta) P_U \]

where:

- \( P_{AV} \) represents the average price of all the retailer’s customer contracts
- \( P_D \) represents the price of the retailer’s discounted contracts
- \( P_U \) represents the price of the retailer’s contracts with the discounted removed
- \( P_U > P_{AV} > P_D > 0 \)
- \( \beta \) represents the proportion of the retailer’s portfolio comprising of discounted contracts and \( 0 \leq \beta \leq 1 \)

The net margin on conditional contracts with and without their discounts is given by:

\[ \begin{align*}
M_D &= P_D - C \\
M_U &= P_U - C
\end{align*} \]

where:

- \( M_D \) represents the net margin on a discounted offer
- \( M_U \) represents the net margin on a contract with the discounted removed
- \( C \) represents the average cost to service each contract

Substituting (2a) and (2b) into (1) gives:

\[ P_{AV} = \beta (M_D + C) + (1 - \beta) (M_U + C) \]
Rearranging (3) and noting that by definition: \(M_{AV} = \beta M_D + (1 - \beta)M_U\) gives:

\[
(4) \quad M_{AV} = P_{AV} - C
\]

The assumed values described earlier in the section can now be represented as:

\(P_{AV} = $100\), \(C = $95\) and \(M_{AV} = $5\).

Because the discount rate is described by retailers relative to the price of the same contract with its discounts removed, the price of the discounted contract can be written as:

\[
(5) \quad P_D = (1 - d).P_U
\]

where: \(d\) represents the size of the discount and \(0 \leq d \leq 1\)

Substituting equation (5) into (1) and simplifying gives:

\[
(6) \quad P_{AV} = (1 - \beta.d).P_U
\]

From this simple model, some useful insights can be gained into the decisions retailers face when offering discounted contracts into the retail energy market. These insights are most easily explained using a numerical example. Again, we emphasise that the numbers are less important than the story they tell.

All the scenarios modelled (and shown in Table 1) adopt the binding, portfolio-wide assumption described above — namely, that \(P_{AV} = $100\) and \(M_{AV} = $5\). These are average outcomes across the entire portfolio, however, some contracts in the portfolio will involve lower prices and lower margins (ie. contracts where the discounts are honoured) while other contracts in the portfolio will involve higher prices and larger margins (ie. where customers have not met the required conditions).

The base case in Table 1 represents the state of the retailer energy market before the introduction of full retail competition. There are no discounts available in the market and all contracts are priced such that: \(P_U = P_{AV} = $100\).

Scenario 1 in Table 1 represents the state of the retailer energy market sometime after the commencement of full retail competition (that is, somewhere around phases 2 or 3 described at the start of this section). Discounted and undiscounted contracts are now available in the market with the discounted price set at 10 per cent below the undiscounted price \((d = 0.10)\). In scenario 1, we assume that the minimum margin required by the retailer on any of its contracts is 2.5. This implies the price available on discounted contracts must be 97.5 (recall \(C = 0.95\) and equation (2a) implies \(P_D = M_D + C\)). Equation (5) solves for the
price of undiscounted contracts \((P_U = 108.33\)). With values of \(P_{AV}\), \(P_D\) and \(P_U\) determined, equation (1) solves for the value of \(\beta\) — that is, \(\beta = 0.77\). In other words, the model indicates that in order to offer a 10 per cent discount in the market while maintaining an average margin of 5 and a minimum margin of 2.5, the retailer will need to balance its portfolio with 77 per cent of its customers on discounted contracts and 23 per cent of its customers on undiscounted contracts.

Scenario 2 is solved in the same way as scenario 1, but it involves retailers increasing the discount they are offering in the market to 20 per cent. While the discounted price is kept at the same value, the price of undiscounted contracts \((P_U)\) increases sharply. At the same time, the proportion of customers on discounted offers increases \((\beta = 0.90)\). The intuition behind this result is straightforward. Because the discounted price is stopped from falling below its value in scenario 1, the higher discount can only be offered if the undiscounted price increases. Because the undiscounted price increases while the discounted price remains the same, the higher margin on undiscounted contracts \((M_U\) has doubled) can be used to subsidise a greater proportion of discounted contracts in a retailer’s portfolio while still satisfying the portfolio-wide assumption that \(P_{AV} = \$100\) and \(M_{AV} = \$5\).

**Table 1. Numerical modelling of a retailer’s portfolio of discounted and undiscounted contracts**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>(d)</th>
<th>(P_D)</th>
<th>(M_D)</th>
<th>(P_U)</th>
<th>(M_U)</th>
<th>(\beta)</th>
<th>(P_{AV})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>100</td>
<td>5</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>0.1</td>
<td>97.50</td>
<td>2.50</td>
<td>108.33</td>
<td>13.33</td>
<td>0.77</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>0.2</td>
<td>97.50</td>
<td>2.50*</td>
<td>121.88</td>
<td>26.88</td>
<td>0.90</td>
<td>100</td>
</tr>
<tr>
<td>2A</td>
<td>0.2</td>
<td>95.00</td>
<td>0.00</td>
<td>118.75</td>
<td>23.75</td>
<td>0.79</td>
<td>100</td>
</tr>
<tr>
<td>2B</td>
<td>0.2</td>
<td>94.55</td>
<td>-0.45</td>
<td>118.18</td>
<td>23.18</td>
<td>0.77*</td>
<td>100</td>
</tr>
<tr>
<td>2C</td>
<td>0.2</td>
<td>91.27</td>
<td>-3.73</td>
<td>114.09</td>
<td>19.09</td>
<td>0.62</td>
<td>100</td>
</tr>
<tr>
<td>2D</td>
<td>0.2</td>
<td>88.00</td>
<td>-7.00</td>
<td>110.00</td>
<td>15.00</td>
<td>0.45</td>
<td>100</td>
</tr>
<tr>
<td>2E</td>
<td>0.2</td>
<td>86.67</td>
<td>-8.33</td>
<td>108.33*</td>
<td>13.33</td>
<td>0.38</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>0.3</td>
<td>97.50</td>
<td>2.50*</td>
<td>139.29</td>
<td>44.29</td>
<td>0.94</td>
<td>100</td>
</tr>
<tr>
<td>3B</td>
<td>0.3</td>
<td>91.03</td>
<td>-3.97</td>
<td>130.04</td>
<td>95.04</td>
<td>0.77*</td>
<td>100</td>
</tr>
<tr>
<td>3E</td>
<td>0.3</td>
<td>75.83</td>
<td>-19.17</td>
<td>108.33*</td>
<td>13.33</td>
<td>0.26</td>
<td>100</td>
</tr>
</tbody>
</table>

= Values set exogenously as part of pricing strategy
* = Values set at same value as in Scenario 1
The five scenarios in 2A to 2E in Table 1 highlight alternative combinations of outcomes while achieving a discount of 20 per cent and the portfolio-wide requirement that $P_{AV} = \$100$ and $M_{AV} = \$5$. The shaded values in Table 1 reflect the variables set exogenously and the model solves for the values of the remaining variables.

Perhaps the easiest way to interpret scenarios 2A to 2E is as follows.

As has already been noted in this paper, retailers’ marketing strategies have focussed on discounts rather than prices. It seems that customers respond to offers of headline discounts rather than an assessment of the prices they would be required to pay under competing contracts. Consequently, retailers are constantly considering how they might announce larger discounts. When announcing larger discounts the retailers must contemplate the minimum margins they are prepared to make on their discounted offers. This in turn determines the minimum price they can charge for those contracts. This is a commercial decision and it is not observable by regulators.

Regulators can and do, however, monitor the price of discounted and undiscounted contracts. As mentioned above, until recently (ie. until the advent of Phase 5), retailers invariably pegged the price of their undiscounted contracts to the price of their standard retail contracts. Because the price of standard retail contracts must be gazetted by retailers (and because they can be changed no more often than every 6 months) they represent the most transparent and stable prices available to commentators on the retail energy market. It may be the case, that this heightened level of transparency imposes some discipline on the extent to which retailers are willing to increase their undiscounted prices.

Perhaps more importantly, it would also place a retailer’s competitive reputation at considerable risk if it were seen to be offering higher discounts by merely increasing the price of its undiscounted offer. This is precisely what happens in the move from scenario 1 to scenario 2 in Table 1. Because the retailer has not reduced the minimum margin it is prepared to make on its discounted offer, increasing the price of its undiscounted offer is the only means which it can achieve the higher discount. Indeed, Table 1 shows that under these circumstances increasing the discount from 10 per cent to 20 per cent (that is, moving from scenario 1 to scenario 2) requires the prices of the undiscounted offer to increase by 12.5 per cent. Increasing prices by 12.5 per cent in order to increase the headline discount by 10 per cent would be damaging to a retailer’s reputation. It may even raise the ire of regulators if higher discounts were contrived by merely raising the undiscounted price. Retailers must therefore pursue less risky and damaging pricing strategies.

Scenarios 2A to 2E model how retailers may achieve 20 per cent discounts while maintaining their portfolio-wide requirement that $P_{AV} = \$100$ and $M_{AV} = \$5$. The scenarios involve the following portfolio pricing strategies:
Scenario 2A – the margin on discounted contracts is set at zero (i.e. $P_D = C$)

Scenario 2B – the proportion of customers on discounted contracts is the same as in scenario 1 (i.e. $\beta = 0.77$)

Scenario 2C & 2D – the price of undiscounted contracts is set arbitrarily lower than in scenario 2 (i.e. $P_U < 121.88$)

Scenario 2E – the price of undiscounted contracts is set at the same price as in scenario 1 (i.e. $P_U = 108.33$)

Three observations can be made about the structure of the retailers’ portfolio as we move from scenario 2 to scenarios 2A through to 2E:

- The price of discounted contracts declines as does the margin made on these contracts with the margin soon becoming negative. That is, in scenarios 2B to 2E the retailer is losing money on each discounted contract it has in its portfolio.

- The price of undiscounted contracts falls (and it falls by a greater amount than the price on discounted offers) but the margin always remains positive.

- The proportion of customers to whom the retailer can make discounted contracts available falls significantly. For example, the proportion of customers who can be placed on a discounted offer in scenario 2E is only 38 per cent compared to 90 per cent in scenario 2.

Again, the intuition behind these three findings is not particularly complicated. In order to keep its undiscounted price from attracting too much unwanted attention by commentators and regulators, the retailer must surrender margin on those contracts. In order to be able to offer a 20 per cent discount it must lower its discounted price, thus surrendering margin on its discounted contracts. The margin on discounted contracts eventually becomes negative. These negative margins are offset by the positive margins on the undiscounted contracts. In order to meet the portfolio-wide requirement of a fixed average margin (of $5 from every $100 of revenue), the retailer can only afford to maintain a smaller proportion of its customers on its loss-making discounted contracts.

The pricing strategies in scenarios 3, 3B and 3E correspond to those in scenarios 2, 2B and 2E but for a headline discount of 30 per cent.

Mathematically, none of this is remarkable. What is remarkable, however, is the insight this simple model sheds on the potential pricing strategies of energy retailers.
5.1 Insights to retailer behaviours from the portfolio pricing strategy model

By their own acknowledgement, retailers’ marketing strategies largely focus on discounts rather than on prices (tariffs) or on bills. Retailers have found that this is the most effective way of offering their ‘wares’ in a crowded market place. There are some exceptions, but in the main retailers compete over who can offer the largest headline discount.

( Note: We are not suggesting that this is the only dimension on which retailers compete — but we are confident is stating it is the dominant dimension in which they compete. Other dimensions might include company reputation or ownership. Some companies seek to attract customers by presenting themselves as sector mavericks, while others take the opposite approach and market their brands as established and reliable. )

Keen to announce ever larger discounts — but equally keen not to attract the ire of customers, regulators, policy makers, commentators or the media — we expect retailers will offer discounted contracts involving low prices and low, and possibly negative margins. Some of the illustrative options facing a retailer correspond to those shown in Table 1. The most interesting finding for consumers in Table 1 is the significant impact on the proportion of discounted contracts a retailer can tolerate in its portfolio of customer accounts as it pursues increasingly aggressive pricing strategies. The impact of this portfolio effect can be seen by comparing some of the modelled scenarios.

A retailer which has been sitting comfortably in scenario 1 for some time will have 77 per cent of its customers on discounted offers. If the retailer now wishes to offer 20 per cent discounts it may adopt various strategies. One option may be to target the same portfolio balance of discounted and undiscounted contracts. This is represented by scenario 2B. In this case the margin on discounted contracts becomes slightly negative but there has been a large increase in the price of undiscounted contracts (of 9.6 per cent). For the reasons mentioned above, the retailer may wish to avoid being seen to offer higher discounts largely on the back of inflating its undiscounted price.

Perhaps the most aggressive strategy a retailer is likely to adopt is represented by scenario 2E. In this scenario, the retailer seeks to leave its undiscounted offer unchanged (that is, $P_U$ is the same in scenarios 1 and 2E). Under this strategy, the retailer is making considerable losses on its discounted contracts. In order to maintain the required rate of return on its portfolio, the retailer must ensure that the proportion of its customers on discounted offers is reduced to only 38 per cent.

This has important consequences for the retailer that was previously sitting stably in scenario 1 with 77 per cent of its customers on discounted offers. In moving to 20 per cent discounts by adopting the strategy in scenario 2E, the retailer must halve the proportion of its customers on discounted. However, retailers do not turn over their entire customer base each year. While a customer base may grow or shrink with time or as discounts are altered,
it is highly unlikely that this movement would create sufficient scope to accommodate such large shifts in the proportion of customers who must be placed on undiscounted offers. Retailers cannot rely on attrition and attraction to rebalance their portfolios.

In other words, retailers must pursue two strategies at once. At the same time as they are offering higher discounts in the market place, they must simultaneously be adopting strategies to reduce the number of their existing customers on discounted contracts.

As far as the modelled results in Table 1 are concerned, these customers would see their prices increased from 97.5 to 108.33 as they lost the benefit of their discounts; an increase of 11.1 per cent. That is, in order to increase its headline discount from 10 to 20 per cent, the retailer would need to increase the prices paid by 39 per cent of its customers \((= 77 – 38)\) by 11.1 per cent.\(^9\)

Put simply, the more aggressive a retailer’s discounts become, the more aggressive it must become in finding ways to shift its customers off discounted offers contracts and on to its undiscounted contracts. If it fails to do so, it will not meet its required rate of return on its portfolio of customer contracts. Though not shown in Table 1, if the retailer failed to rebalance its portfolio in scenario 2E, its portfolio rate of return would become negative. Clearly, this would be unacceptable to its shareholders and financiers.

This is the most significant finding from this portfolio model of retailer contracts: Aggressive discounting must be accompanied by correspondingly aggressive strategies to unwind the discounts provided to existing customers.

A retailer wishing to offer even more aggressive discounts would need to ensure even fewer of its customers remained on discounted contracts. For example, modelling a discount of 30 per cent (which corresponds to the highest discounts currently seen in the Victorian retail energy market\(^10\)), indicates that the retailer would need to reduce the proportion of customers on discounted contracts by two-thirds to just 26 per cent (see scenario 3E).

The pressure on retailers’ to unwind discounts as quickly as they continue to offer even higher inducements, explains why discounts (particularly higher discounts) will only be offered on conditional terms. The stricter the conditions, the more likely it becomes that the customer will fail those terms and will incur the undiscounted price.

For now, paying on time and access to direct debit are the two dominant conditions attached to discounts. At face value, it would seem that these terms are regressive insofar as they disadvantage customers who do not have ready or reliable access to the funds

\[^9\] In fact, more of its existing customers may be affected adversely if the retailer attracts new customers into its portfolio.

\[^10\] While marketed discount rates now often reach 35 per cent, these typically apply only to the usage charge. For a smallish household using 4000 kWh per year the effective discount on the entire bill would be around 25 per cent. For larger households, the effective discount would be higher.
required to guarantee these conditions can be met. It may be argued that customers in this category may impose greater costs on retailers (eg. the cost of pursuing payment as well as retailers’ holding costs in the meantime) and that the loss of a discount reflects these higher costs.\(^{11}\) However, as the market has evolved and conditional discounts have increased in size, the impact on customers who may be vulnerable to not meeting the terms of their contracts has increased significantly. For example, a smallish household that has entered into a contract offering a conditional 35 per cent discount who fails to meet those conditions, now faces higher costs of many hundreds of dollars (on an annualised basis). We consider it unlikely that the retailer costs associated with customers in these situations have increased at the same rate.

We explore these themes further in section 8.2.

Unwinding discounts is not a retailer imperative affecting vulnerable customers only. Arranging automatic prepayment and direct debit and honouring those arrangements may not be an overly challenging problem for many customers. Different strategies are required to slip this group of customers off their discounts. The author experienced one such strategy.

The contract covering the provision of gas to the author’s household was coming to an end. The contract had provided a reasonably generous discount on condition that bills were paid on time and via direct debit. This was easily arranged and honoured. As the contract approached its termination date, the retailer issued a letter to the account holder advising it accordingly (and as required by regulation). The letter consisted of few words advising that:

- the contract was coming to an end
- the account holder should contact the retailer to enter into a new discounted arrangement, and
- if the account holder did not make contact, the retailer would renew the contract but without the previously agreed discount — or indeed, any other discount currently being offered by that retailer.

In contrast to the retailer’s sales material, Reminder Notice or Disconnection Warning Notice, the letter was unremarkable and easily ignorable. Arguably, it was designed to be ignored unlike the aforementioned documents. In this case, it was not ignored. Research was conducted via the Victorian Government Website (Victorian Energy Compare at switchon.vic.gov.au) to assess the current options available in the market. An alternative supplier was identified and discussed by the householders. The weeks slipped away, full of other household and workplace distractions. The contract came to an end. The household failed to act and it is now facing undiscounted charges that are considerably higher than

\(^{11}\) Recall, late payment fees are banned in Victoria under legislation.
what it might otherwise be paying. Importantly, bills continue to be paid on time and via direct debit.

Therefore, despite continuing to meet the retailer’s terms for its discounted offers, the household has now been denied the benefits of those discounts merely because it failed to make a phone call. And, despite its previous contract being time-limited (it was a one year contract), the household has now been placed on an evergreen contract — meaning one simple inaction will ensure it pays among the highest rates in the market on an ongoing basis.

It is very likely that this household is not unique. It is likely to be replicated across the State in many hundreds of thousands of households and small businesses. Its inertia is central to retailers’ pricing strategy as they seek to balance and rebalance their portfolios of customer accounts to accommodate the ever higher discounts being offered in the retail energy market. The significance of inertia is discussed further in section 9.

It is also worth noting that retailers’ strategies to unwind the discounts provided to existing customers may explain why customers “disappear” from the observable retail energy market.

Customers disappear when regulators and other commentators cannot observe the prices those customers are paying. At any point in time, observers of the market can only see the prices of retailers’ generally available (or listed) offers. These are the prices available to new customers. Those listed prices tell observers nothing about the prices paid by existing customers.

There is plenty of anecdotal evidence to suggest that existing customers (and indeed, many new customers) may be paying prices that differ from those published by retailers. There is also anecdotal evidence to suggest that the prices customers pay are ratcheted up over time once those customers disappear from view. Box 1 highlights some of the means used to make customers ‘disappear’.  

As discussed later in this paper, customer inertia and retailers’ ability to make customers “disappear” from the observable retail energy market may be the crucial factors in allowing retailers to offer increasingly aggressive discounts, albeit to fewer and fewer customers.

The following discussion turns to an exploration of how customers respond to retailers pricing and portfolio strategies.

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12 To be clear, customers who ‘disappear’ can also benefit financially from doing so — at least temporarily.
Box 1: How customers “disappear”

How many customers are on published offers? There is no data available to answer this question but we suspect that the proportion is decreasing over time. When these customers disappear, the price they pay is completely invisible to the regulator, competitors and other customers. We’ve identified numerous invisible contract types where price movements are possible without any market visibility. These include:

**Closed offers.** These are contracts that were once offered by the retailer but have subsequently been withdrawn from sale. Customers who purchased these contracts when they were available, will still be on these contracts but have no independent means by which to confirm whether the retailer is still honouring all the terms of that contract — most notably, the effect of any promised discounts.

**Amended contracts.** One of the unique features of energy contracts is that retailers can unilaterally amend tariffs at any time within the life of the contract subject to some minimal notification requirements. To the extent that this affects any contract that is not currently available in the open market, price movements will be invisible to third party observers.

**Special offers.** Retailers, from time-to-time, develop tailored products that they market to a select group of customers. These may be customers identified as having very particular energy needs or the offers may simply be marketing devices targeting a readily identifiable group of potential new customers (for example, members of the local football club). Where these offers are made and accepted “off market”, the prices they entail will be invisible to the general market.

**Retention offers.** When retailers become aware that a customer is about to switch to a competitor, they will often make contact and seek to entice the customer not to move to another retailer. The terms of offer may not bear any resemblance to the published offers available to other customers.

**Roll-over arrangements.** Most market offers are for terms of 1 or 2 years. Contracts will specify what will occur at the end of the contract’s term. In keeping with regulatory requirements, the contract will explain that the retailer will endeavour to contact the customer and outline how the customer will be rolled-over to another contract in the event that the customer does not respond to the retailer’s advances. There are no regulatory specifications regarding the nature of the roll-over tariffs on to which customers can be placed.

And the market continues to innovate...

**Profiled offers.** With the advent of new technology, particularly smart meters, retailers have access to more information than ever before about the usage patterns of each customer. This enables them to develop offers uniquely suited to each customer’s consumption profile. By definition, these contracts are not ‘generally available’ and so have no general visibility.

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13 It has been argued that a countervailing discretion is provided to customers who can exit the contract at any time subject to paying their incumbent retailer an exit fee set by the regulator ($22 in Victoria). As part of their marketing strategies, some retailers’ offer customers the freedom to leave without paying the exit fee.
**Bundled offers.** With the expansion of ‘energy’ as a product, retailers may include a broader suite of goods and services. These might include: solar panels, batteries, energy efficient appliances, energy management services and who knows what else in the future. To the extent that the price of these services are bundled with the price of the energy being supplied, the price of that energy may quickly become invisible.


5.2 A further insight into consumer behaviour from the portfolio pricing strategy model

The β parameter is also related to the average length of the relationship (T) between a customer and a retailer — that is, before the customer switches to another retailer\(^ {14} \) — such that:

\[
T = T_D / \beta
\]

where \( T_D \) is the term of the discounted contract

Equation (7) implies that if a customer is on a discounted contract for a period \( T_D \) with a particular retailer, this period will be typically followed by a period of \( T - T_D \) on an undiscounted contract before the customer overcomes their inertia and switches to another retailer.

The modelled results shown in table 2 can be used to show the importance of inertia to retailers’ pricing strategies in box 1. The first three columns are copied directly from the earlier table. The fourth column is intended to show that as the market has evolved, contract lengths have shortened (as discussed in section 3). The fifth column is derived from equation (7) and the last column reflects the difference between the two previous columns.

**Table 2: The effect of inertia - Lengthening time on undiscounted prices**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Discount</th>
<th>( \beta )</th>
<th>Typical contract length ( (T_D) )</th>
<th>Implied term of relationship ( (T) )</th>
<th>Implied term of undiscounted prices ( (T-T_D) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.1</td>
<td>0.77</td>
<td>3</td>
<td>3.90</td>
<td>0.90</td>
</tr>
<tr>
<td>2E</td>
<td>0.2</td>
<td>0.38</td>
<td>1.5</td>
<td>3.95</td>
<td>2.45</td>
</tr>
<tr>
<td>3E</td>
<td>0.3</td>
<td>0.26</td>
<td>1</td>
<td>3.85</td>
<td>2.85</td>
</tr>
</tbody>
</table>

\(^{14}\) It may also represent the average time before the customer overcomes their tendency to inertia and contract the same retailer to negotiate a new discounted contract.
As before, the figures are less important than the story they tell. In this case, we can see that as market discounts have become more aggressive, contract lengths shortened even though there has been little change in the length of the total relationship between a retailer and a customer. As a result, customers are slipping on to undiscounted contracts for longer periods. This suggests that even though switching rates may have remained largely unchanged and the length of the typical relationship between a retailer and a customer has remained stable (fifth column), customer inertia may have increased (last column) since the introduction of full retail competition. That is, customers are tolerating undiscounted prices for longer than in the past.

The unanswered question in this discussion is whether increasing inertia is an exogenous feature of the market which is enabling more aggressive pricing strategies or whether retailers are inducing greater inertia in order to support their marketing of higher discounts. Quite possibly, the answer is “a bit of both”. We return to a discussion of these issues in section 9.

5.3 Acknowledging the model’s assumptions

There is no doubt the model presented above is a highly stylised representation of the market and the way retailers would construct their portfolios of customer contracts. The model assumes just one type of contract which can exist in one of two states: discounted or undiscounted. In reality, retailers may have multiple offers available at any given time (for a particular customer or group of customers); their portfolios might consist of more price points than the two assumed in the model above; and there will be a time dynamic to determining over what period retailers will be optimising their portfolios. In addition, portfolios will include customers with varying usage volumes and profiles, and contracts may vary with respect to the structure of the tariffs and to which elements of the bill a discount is applied.

Likewise, retailers may not necessarily move customers from discounted prices to undiscounted prices in one fell swoop. As discussed in box 1, retailers have varying strategies for ratcheting up the prices paid by their customers.

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15 Admittedly, the values for $T_D$ have been chosen to ensure the derived value of $T$ remains largely unchanged (and at 4 years, it broadly corresponds to a switching rate of 25 per cent – as observed in Victoria). Nevertheless, the declining length of discounted contracts ($T_D$) is broadly in line with those observed in the market as described in section 3.
All of these additional complexities can be modelled although the mathematics would quickly become unwieldy. Additional complexity is unlikely to change the overall nature of the findings reported in this paper.

16 Whereby each retailer has a vector of betas representing the weights attached to each type of contract, such that for each retailer $P_{AV} = \beta_0 P_0 + \beta_1 P_1 + \beta_2 P_2 + ... + \beta_n P_n + (1 - \beta_0 - \beta_1 - \beta_2 - ... - \beta_n)P_U$ where $P_D < P_1 < P_2 < ... < P_n < P_U$ and $0 < \{ \beta_0, \beta_1, \beta_2, ..., \beta_n \} < 1$. All these betas could be compiled into a matrix; with separate matrices representing all the discounted and undiscounted prices of each retailer. Undertaking this analysis could be an area for further research.
6. THE ECONOMIC IMPACT ON CUSTOMERS

The diminishing marginal utility of consumption is long established in economics and holds that every additional dollar of consumption brings consumers additional but less utility. The non-satiation property of this utility function means that consumers will prefer more consumption to less consumption (or perhaps more usefully, consumers don’t prefer less consumption). This paper is not the place for a full exposition of the economics of consumer welfare but it will draw upon these well-established concepts.

Diminishing marginal utility and non-satiation imply the standard, continuously upward sloping utility function shown in figure 1.

Figure 1 Utility function demonstrating diminishing marginal utility

The typical form given to the utility function is:

\[
(8) \quad U(X) = \frac{X^{1-\theta}}{(1-\theta)} \quad \text{if } \theta > 0, \theta \neq 1
\]
\[
= \ln X \quad \text{if } \theta = 1
\]

where \(X\) represents consumption, and \(U(X)\) represent the utility gained from that consumption.
This function can be used to assess the impact of retailers’ portfolio pricing strategies on customers.

To do so, we assume that consumers have an allocated budget (B) to spend on their energy. Any funds that remain from this budget after paying for their energy can be used for other expenditures which may provide them with utility. The utility they gain from the consumption afforded by these remaining funds is given by:

\[ U(X) = U(B - P) \]

where \( P \) represents the price paid by the consumer for their energy.

The utility gained from discounted and undiscounted contracts is respectively given by:

\[ U_D(X) = U(B - P_D) \]
\[ U_U(X) = U(B - P_U) \]

where: \( P_U > P_D > 0 \)

implying: \( U(B - P_D) > U(B - P_U) > 0 \)

That is, the utility to be gained from paying a discounted price is greater than the utility to be gained from paying an undiscounted price because paying the discounted price leaves more funds for expenditure on other forms of consumption. Clearly, customers will always prefer to pay discounted prices to undiscounted prices.

The probability that a customer randomly selected from a retailer’s portfolio will be receiving the discounted price is given by the parameter \( \beta \). Alternatively stated, the average price a customer should expect to be paying over the course of their relationship with a retailer is given by:

\[ E(P_\beta) = \beta P_D + (1 - \beta) P_U \]

where \( E(P_\beta) \) is the expected price that customers should expect to pay when retailers are balancing their portfolios based on \( \beta \).

Note, the similarity between equations (1) and (12), that is: \( E(P_\beta) = P_{AV} \)

The utility customers can expect from a contract including a conditional discount is given by:
(13) \[ EU(X_\beta) = U(B - E(P_\beta)) \]

where: \( X_\beta \) represents the level of consumption afforded by conditional contract

\( P_\beta \) represents the expected price of a conditional contract

\( EU(X_\beta) \) is a customer’s expected utility when they purchase a conditional contract

Substituting equation (12) into (13) and rearranging gives:

(13’) \[ EU(X_\beta) = \beta U(X_D) + (1 - \beta)U(X_U) \]

Equation (13’) highlights that a customer entering a conditionally discounted contract should expect less utility than if they were just paying the discounted price, but more than if they were just paying the price with the discount removed. That is, \( U(X_D) > EU(X_\beta) > U(X_U) \).\(^{17}\)

This means that customers are likely to be disappointed when they enter a conditionally discounted contract if they underestimate the likelihood of their own inertia. Doing so suggests they will expect utility of \( U(X_D) \) but had they been rational about the likelihood of their inertia, they would have only expected \( EU(X_\beta) \).

These results are presented diagrammatically in Figure 2.

\(^{17}\) Alternatively: \( U(B - P_D) > EU(B - P_\beta) > U(B - P_U) \)
6.1 Customers may not know the value of $\beta$

As shown below in section 7, it is possible to estimate the value of $\beta$ empirically, however, it would not be realistic to expect customers to go through this effort. Instead, customers are more likely to estimate the probability that they will honour the terms of their contract and maintain their discounts even after their contract has expired.

We expect that in most cases customers are likely to be overly optimistic about their chances of maintaining their discounts. That is, we expect they will be display overconfidence bias and rate their own abilities as being ‘better than average’. This is expressed mathematically in equation (14).

\begin{equation}
E_i(\beta) > \beta
\end{equation}

where $\beta_i$ represents the objective probability that individual ‘i’ will take all the necessary actions to maintain their discounted contract.

$E_i(\beta_i)$ reflects an individual’s subjective expectation about how likely they are to take all the necessary actions to maintain a discounted contract.
Overconfidence bias means customers will tend to underestimate the price they will pay over the life of their relationship with the retailer and overestimate the utility they can expect from entering into a discounted contract with that retailer. This can be seen by substituting $E_i(\beta_i)$ for $\beta$ in equation (13'). In the limit, customers will judge themselves as being completely likely to take all necessary actions to maintain their discounts in which case they will expect $E_i(\beta_i) = 1$ and $E_i(U(X_{\beta_i})) = U(X_0)$.

The more unrealistic customers are about their abilities, the greater will be the gap between what they expected to pay and what they actually paid. Alternatively stated, the gap between $E_i(\beta_i)$ and $\beta$ will be a cause of ‘bill shock’.

If $\beta$ is indeed declined as retailers pursue increasingly aggressive pricing and portfolio strategies (as predicted by the stylised modelling in section 5) then customers are increasingly at risk of ‘bill shock’. As the retailers become more aggressive, the adverse financial consequence of overconfidence bias increases for customers.

It is worth noting that while it may be possible for an individual customer to outperform the market, such that $\beta_i$ exceeds $\beta$, it is not possible for $\beta_i$ to systematically differ from $\beta$ across the entire population of a retailer’s customer base. A systematically deviation would see retailers fail to generate their required returns and they would adjust their portfolio pricing strategies accordingly.
7. AN EMPIRICAL ANALYSIS OF THE VICTORIAN RETAIL ENERGY MARKET

In its *Victorian Energy Market Report 2015-16*, released in November 2016, the Essential Services Commission reported on average price outcomes for a range of different contract types for electricity and gas customers. In this section, the results reported by the Commission are analysed in terms of the portfolio pricing model presented in this paper. The Commission’s findings are replicated in Table 3.

Table 3. Prices and discounts for electricity (4,000 kWh) and gas (54.4 MJ) in 2014-15 and 2015-16

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Contract ($P_s$)</td>
<td>$1,384</td>
<td>$1,376</td>
<td>- 0.5%</td>
<td>$1,196</td>
<td>$1,258</td>
<td>7.4%</td>
</tr>
<tr>
<td>Proportion of customers on standard retail contracts ($y_S$)</td>
<td>0.091</td>
<td>0.077</td>
<td></td>
<td>0.111</td>
<td>0.106</td>
<td></td>
</tr>
<tr>
<td>Unconditional Market Contracts ($P_M$)</td>
<td>$1,223</td>
<td>$1,306</td>
<td>6.8%</td>
<td>$1,097</td>
<td>$1,196</td>
<td>9.0%</td>
</tr>
<tr>
<td>Discount on Unconditional Market Contracts against Standard Contracts*</td>
<td>11.6%</td>
<td>5.1%</td>
<td></td>
<td>8.3%</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td>Conditional Market Contracts without discounts applied ($P_U$)</td>
<td>$1,332</td>
<td>$1,383</td>
<td>3.8%</td>
<td>$1,208</td>
<td>$1,274</td>
<td>5.4%</td>
</tr>
<tr>
<td>Conditional Market Contracts with discounts applied ($P_D$)</td>
<td>$1,139</td>
<td>$1,137</td>
<td>- 0.1%</td>
<td>$1,072</td>
<td>$1,110</td>
<td>3.5%</td>
</tr>
<tr>
<td>Headline value of discount on Conditional Market Contracts**</td>
<td>14.5%</td>
<td>17.8%</td>
<td></td>
<td>11.3%</td>
<td>12.9%</td>
<td></td>
</tr>
</tbody>
</table>

* The discount is given by $100 \times \frac{1 - P_M}{P_S}$

** The headline discount is given by $100 \times \frac{1 - P_D}{P_U}$
Table 3 reports on average prices for three types of contracts.

- **Standard contracts** – these are contracts with protections that have been grandfathered since the introduction of full retail competition. On average, the price of standard contracts for electricity declined by 0.5 per cent in 2015-16 while standard contracts for gas increased by 7.4 per cent.

While it is true that every retailer must publish and gazette standard contract offers, they are not required to accept a customer’s request to enter into such a contract. Anecdotal evidence suggests that a customer requesting a standard contract will typically be steered by the retailer towards one of its market contracts. Standard contracts also serve as default contracts, but in very limited circumstances. In 2015-16, only 7.7 per cent of households are now on standard contracts for electricity and 10.6 per cent for gas.

It appears that standard contracts play no (or very little) direct role in the actively marketed part of the retail energy market so we set these contracts aside in the following analysis.

- **Unconditional Market contracts** – these contracts include charges (supply and usage) that are not determined according to whether the customer meets any conditions set by the retailer. These contracts are generally offered at a discount to the price of standard contracts. This difference will reflect (i) the promised ‘savings’ needed to attract customers off standard contracts and on to this type of contract, and (ii) any additional costs to the retailer from the grandfathered protections embedded in standard contracts but not incurred with market contracts.

In 2015-16, unconditional market contracts across electricity and gas were, on average, offered at a discount of about 5 per cent off the price of standard contracts. This was about half the discount available a year earlier.

- **Conditional Market contracts** – these contracts have been discussed at length in this paper. They are offered to customers with discounts that are dependent on the customer meeting certain conditions (typically, pay on time and direct debit). The headline value of discount is calculated by comparing the discounted price with the undiscounted price.

As table 3 shows, the average headline discount on conditional market contracts is greater for electricity than for gas. Headline discounts increased in value in 2015-16. For electricity, the average headline discount increased from 14.5 to 17.8 per cent, while for gas it increased from 11.3 to 12.9 per cent.
Before continuing, we acknowledge two limitations of this analysis. First, it is applied to average results drawn from across the retail energy market. Clearly, the results for individual retailers can differ from those of the market as a whole. Second, the results reported by the Commission refer to particular levels of energy use. Had different levels of energy use the results would have differed (in quantum but not direction).

* The values reported by the Essential Services Commission can be entered into the portfolio price model developed in this paper to shed light on retailers’ portfolio management strategies in recent years. The Commission has reported findings for unconditional and conditional contracts. In the modelling below, the price of an unconditional market contract is represented by $P_M$ while the discounted and undiscounted prices of conditional contracts are represented by the familiar notation of $P_D$ and $P_U$.

We assume that if retailers are offering two types of market contracts to customers (that is, unconditional and conditional contracts), then they must be indifferent between whether customers choose to enter one type of contract or the other. In the terminology of the portfolio pricing model, we assume that the net margin on unconditional contracts must be the same as the expected net margin on conditional contracts. The net margin on unconditional market contracts ($M_M$) is given by equations (15) which is equivalent to equations (2a) and (2b).

$$ (15) \quad M_M = P_M - C $$

Retailer indifference between whether customers choose to enter an unconditional contract or a conditional contract is represented by:

$$ (16) \quad M_M = M_{AV} $$

where $M_{AV}$ is the margin on a conditional contract and is given by equation (4)

Substituting equations (1), (4) and (15) into the indifference relation (16) and solving gives:

$$ (17) \quad P_M = \beta P_D + (1 - \beta) P_U $$

Equation (17) can be rearranged to solve for $\beta$.

$$ (18) \quad \beta = ( P_U - P_M ) / ( P_U - P_D ) $$
Because $P_M$, $P_D$ and $P_U$ are all observable, as shown in Table 3, $\beta$ can be derived empirically. Importantly, $\beta$ can be derived without knowing the retailers’ costs ($C$) or margins ($M_M$, $M_D$ and $M_U$), all of which are treated by retailers as commercially sensitive and not observable.

The empirically derived value of $\beta$ is shown in Table 4 for each year and the two energy products along with the average headline discount rates.

Table 4  Solving for Beta($\beta$) in 2014-15 and 2015-16

<table>
<thead>
<tr>
<th></th>
<th>Electricity</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average discount</td>
<td>14.5 %</td>
<td>17.8 %</td>
</tr>
<tr>
<td>Beta ($\beta$)</td>
<td>0.565</td>
<td>0.313</td>
</tr>
</tbody>
</table>

Table 4 shows that energy retailers are clearly the more ‘aggressive’ in their pricing and portfolio strategies in the electricity market. The average level of discounts is higher and the proportion of customers on discounted rates is considerably lower in the electricity market. Indeed, in 2015-16 electricity retailers required that 69 per cent of their customers on conditional discounts were no longer receiving the benefit of those discounts. Alternatively stated, only 31 per cent of customers who had entered a market contract with discounts could expect to still be receiving the full benefit of those discounts. In gas, 48 per cent of customers could expect to still be receiving the full benefit of their discounts.

Taking into account that some customers still remain on standard retail contracts implies that the proportion of all customers who may be on discounted market offers will be somewhat lower than $\beta$, as shown in Table 5.

Table 5  The proportion of all customers paying discounted prices

<table>
<thead>
<tr>
<th>Contract type</th>
<th>Average annual bill ($) – Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electricity - 4,000 kWh</td>
</tr>
<tr>
<td>Proportion of customers on market offers receiving the benefit of discounted prices ($\beta$)</td>
<td>2014-15</td>
</tr>
<tr>
<td>Proportion of all customers receiving the benefit of discounted prices</td>
<td>0.565</td>
</tr>
<tr>
<td>Proportion of all customers receiving the benefit of discounted prices</td>
<td>0.513</td>
</tr>
</tbody>
</table>
The proportion of residential electricity customers estimated to be benefiting from discounted market contracts in the electricity market fell to 28.9 per cent in 2015-16. This is considerably lower than the estimate of 51.3 per cent for 2014-15. The estimated proportion of residential customers on discounted retail contracts in the gas market was 42.5 per cent in 2015-16 compared to 72.6 per cent in 2014-15. As headline discount rates increased in 2015-16, the proportion of customers receiving those benefits fell markedly.

As explained in section 5, in order to increase their level of discounts, retailers need to ensure that fewer customers remain on those discounted contracts. According to the findings shown in Table 5, between 2014-15 and 2015-16, the proportion of customers on discounted contracts fell from 51.3 per cent to 28.9 per cent. This enabled discounts to increase from 14.5 to 17.8 per cent. We consider it highly unlikely that within one year a quarter of all customers who had entered discounted contracts suddenly became more prone to the inertia and overconfidence described in earlier sections. Rather, it would seem that retailers must have adopted strategies that actively ‘induced’ inertia among their customers — for example, by shortening contract lengths and sending customers bland letters advising that their discounts were shortly due to end.

The retail gas market appears to be less aggressive but is rapidly trending in the same direction as retailers seek to offer higher discounts. In 2015-16, almost half of gas customers who enter a conditional market contract appear to be receiving their discounts. This is 34 per cent lower than a year earlier (= 81.6 – 47.6) when over four out of five gas customers continued to receive the benefits of their discounts.

These precipitous falls in the space of one year demand attention. They suggest a very significant shift in the portfolio strategies being pursued by retailers in their hunt to announce larger and larger headline discounts. Importantly, these strategies are independent of the average cost of service assumption or the level of costs. Retailers’ costs will influence price levels each year, but not pricing and portfolio strategies (that is, costs do not affect the conditional discounts being offered or the strategies retailers may use to influence the level of β).

Although retailers’ portfolio strategies may have become more aggressive, this has been accompanied by more aggressively discounted market offers being made available to customers. Is this shift in the long term interest of consumers?

To begin answering this question, the next section models the impact of retailers’ increasingly aggressive pricing and portfolio strategies on customers’ utility.
In section 6 we introduced a standard, concave utility function to assist in the modelling of the impact on consumers of retailers’ portfolio pricing strategies. This section applies that model empirically using the average prices reported by the Essential Services Commission. To do so, we assume that the household has an allocated ‘energy budget’ (B) which it can spend each year. Any funds that remain from this budget after paying the energy bill can be used for other expenditures which provide the household with utility.

For the purpose of the analysis presented in this section, we focus exclusively on the household electricity budget and we adopt a household energy budget of $1,500 per year. This figure is arbitrary and its absolute value is not significant. The energy budget is set high enough so that remaining funds are always positive. The energy budget is assumed to remain the same (in nominal terms) in 2014-15 and 2015-16. Arguably, the energy budget might change between years. However, we note that the highest and lowest electricity prices in the market (standard contracts and fully discounted market contracts) only differ marginally in the two years. We are therefore comfortable with the assumption of a constant energy budget in the two years of our analysis.

### Table 6. Consumption enabled by different types of electricity contracts

| Contract type                              | Average annual electricity bill ($) – Residential$^{(a)} | Enabled Consumption$^{(b)}$
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Standard Contract</td>
<td>$1,384</td>
<td>$1,376</td>
</tr>
<tr>
<td>Unconditional Market Contracts (P_u)</td>
<td>$1,223</td>
<td>$1,306</td>
</tr>
<tr>
<td>Conditional Market Contracts without discounts applied (P_o)</td>
<td>$1,332</td>
<td>$1,383</td>
</tr>
<tr>
<td>Conditional Market Contracts with discounts applied (P_o)</td>
<td>$1,139</td>
<td>$1,137</td>
</tr>
<tr>
<td>Average discount$^{(c)}</td>
<td>14.5 %</td>
<td>17.8 %</td>
</tr>
<tr>
<td>Beta (β)</td>
<td>0.565</td>
<td>0.313</td>
</tr>
</tbody>
</table>

$^{(a)}$ For household consumption of 4,000 kWh

$^{(b)}$ Assuming a household ‘energy budget’ (B) of $1,500 per year

$^{(c)}$ Average discount = 100 x ( 1 – P_o/P_u )
The first two columns in table 6 replicate the prices of the different electricity contracts shown in earlier tables. The next two columns show the value of consumption on other goods and services enabled by virtue of customers entering these different types of electricity contracts and assuming a household energy budget of $1,500 per year.

Recalling equation (8), we assume $0 < \theta < 1$, that is, we uphold the assumption of diminishing marginal returns. Figure 3 shows the relationship between the different prices in the market in 2015-16 and the utility each price provides customers. Because the horizontal axis is expressed in terms of the consumption each price affords customers, the most heavily discounted price corresponds to the highest level of consumption ($X_D$) shown on the far right of the diagram. The least discounted price, that is, the one in a conditional contract where the conditions have not been met affords the least consumption and is shown on the far left of the diagram ($X_U$). The utility derived from the consumption afforded by an unconditional market contract ($X_M$) also sits on the utility curve and it is always true that if $0 < \theta < 1$, then $U(X_U) < U(X_M) < U(X_D)$ as required by equation (13).  \^18

\^18 Recalling from equations (16) and (17) that $P_M = P_{AV}$ in equation (13).

Figure 3  Consumption and utility in 2015-16

The expected utility from a conditional market contract is shown by $EU(X_\beta)$ in figure 3. This value represents the utility a fully rational customer will expect if they know and accept that the likelihood that they will maintain their discount is given by $\beta$. $EU(X_\beta)$ is the weighted
average of the utility derived from the discounted and undiscounted consumption afforded under a conditionally discounted market contract, where \( \beta \) serves as the weighting parameter. \( EU(X_\beta) \) is given by:

\[
EU(X_\beta) = \beta.U(X_D) + (1 - \beta).U(X_U)
\]

Importantly, \( EU(X_\beta) \) does not sit on the utility curve. Rather, it sits on a straight line that always lies below the curve when customers display diminishing marginal returns on consumption. The distance along the straight line will depend on the value of \( \beta \). Higher values of \( \beta \) would see this point move to the right. Intuitively, as customers’ probability of continuing to receive the benefit of the discount increases, so too does their consumption and the utility gained from that consumption.

The level of consumption corresponding to \( EU(X_\beta) \) is signified by \( X_\beta \) which can only be derived once \( EU(X_\beta) \) has been determined. This level of consumption will always be less than the level of consumption corresponding to the level of consumption available with an unconditional market contract (i.e. \( X_\beta < X_M \)). This is an important finding and derives from the concavity of the utility function.

According to equation (16) retailers will be indifferent between offering customers conditional and unconditional market contracts. Figure 3 indicates that, unlike retailers, consumers are not indifferent between these two types of contracts. Indeed, figure 3 indicates that customers will always prefer the unconditional market contract from which they can expect to derive greater utility, \( U(X_M) > EU(X_\beta) \). This can be explained as follows.

Risk averse customers — that is, those displaying diminishing marginal utility — will prefer the certainty of an unconditional market contract over the ‘gamble’ entailed in accepting a conditional market offer (with odds of ‘winning’ given by \( \beta \)).

This is an important finding. At given market prices, customers will reject the conditional market contracts offered by retailers no matter how large the headline discounts.

This is a particularly important finding in this paper precisely because it fails to predict what is happening in reality. It fails to hold because customers are observed entering conditional market contracts en masse even though this analysis suggests they should be rejecting these contracts in favour of unconditional contracts.

We shall return shortly to a discussion of why customers appear to eschew unconditional market contracts in favour of conditional market contracts — that is, further analysis is required to explain why customers are willing to gamble on conditionally discounted retail energy contracts. Before doing so, we turn to a further examination of the market.
8.1 The evolution of the market and what it means for customers

The previous discussion focussed on the market in 2015-16. It is possible, using the data published by the Essential Services Commission, to apply the same analysis to 2014-15 and then compare how the market has evolved over that period and its implications for customers.

It has already been noted at length that the market is becoming increasingly aggressive in its discounting strategies — and its portfolio management strategies. The effect of this evolution can be seen in figure 4 which compares the state of the market in 2014-15 and 2015-16. The earlier year’s results are shown in green while the latter year is shown in blue.

Figure 4  Consumption and utility in 2014-15 and 2015-16

A number of interesting observations can be made from the findings shown in figure 4.

- Although the headline conditional discount available across the market increased by 23 per cent in 2015-16 (from 14.5 to 17.8 per cent, see table 3) this was achieved with negligible change to the discounted price. It was achieved by increasing the price customers would pay when they came off the discounted price. In terms of figure 4, this is shown as the fall in the level of consumption when discounts end (i.e. the leftward shift of $X_U$). As a consequence, the line that runs between $X_D$ and $X_U$ tilts downward more sharply.
• In 2015-16, there was a clear shift downwards of the utility to be gained from both conditional and unconditional market contracts — that is, \( EU(X_β) \) and \( U(X_M) \) are lower than they were in 2014-15. Moreover, the relative position of the conditional contract on the straight line has slid further to the left in 2015-16 than in 2014-15 (reflecting the reduction in the value of \( β \)).

• The horizontal spread between \( X_β \) and \( X_M \) has increased as has the vertical spread between \( EU(X_β) \) and \( U(X_M) \). To the extent that the vertical gap signifies customers’ preference for unconditional contracts, this preference deepens in 2015-16. Alternatively stated, customers should be increasingly wary of entering conditional market contracts. Whether this is borne out in practice is unknown as the number of customers on different types of contracts is not disclosed by retailers. We suspect not. (Although not shown here, the results for the retail gas market are similar to those of the retail electricity market and so are not shown.)

These results signify that customers are being asked to take a bigger ‘bet’ on the retail energy market even though they are not being given better upside returns in return for those bigger bets (that is, \( X_D \) is unchanged). All the additional risk has been loaded on the downside of their conditional contracts. Moreover, their chances of ‘wining’ have declined (\( β \) is lower). This is what the competitive market has delivered:

Bigger bets with more for customers to lose than to win and with the chances of ‘wining’ seemingly diminishing each year.

8.2 Examining pricing strategies at a lower level of aggregation

The Victorian Energy Market Report 2016 published by the Essential Services Commission provides data at a lower level of aggregation in the form of scatter plots. This data shows the average bills customers using 4000 kWh per year will face for their total electricity bills across all the generally available offers made by retailers in the different distribution zones. The plots show the amount payable under each offer having taken into account all available discounts. One of the scatter plots is reproduced in figure 5 which shows the results for the Ausnet distribution zone in 2014-15 and 2015-16.\(^19\) Similar patterns are observable in other distribution zones.

\(^19\) The Ausnet distribution zone covers the outer eastern Melbourne metropolitan area and reaches north and east to the State’s borders.
Figure 5  Scatter plot of average annual bills (4000 kWh) and level of discount in the Ausnet distribution zone in 2014-15 and 2015-16

The widest range of offers by retailers can be seen on the vertical axis. These are the unconditional market offers. In 2014-15, these offers varied in price between $1200 and around $1500. This range increased quite notably in 2015-16. Even though there was little change at the lower end, there was a significant upward spread towards $1750.

Separating the scatter plots into the constituent years and comparing figures 6(a) and (b) highlights the underlying dynamics underway in the Victorian retail energy market. Four developments are noteworthy.

- There was a small, upward shift in the scatter diagram in 2015-16 indicating prices increased slightly, on average, across all levels of discounting.

- There appears to be a general migration in 2015-16 towards the right side of the scatter plot with retailers making available more offers with higher discounts.

- In 2015-16, discounted offers are increasingly clustered in two parts of the scatter, namely, around 15 per cent and between 25 to 35 per cent.

- There were significantly fewer low-cost, low-discount offers left in the market in 2015-16. That is, the lower, left corner of the scatter plot appears to hollow out.

These do not appear to be random developments. They appear to reflect a structural shift that is underway in retailers’ pricing and portfolio strategies. Customers who wish to manage the price of their energy use — that is, enter into a contract in the lower region of
the scatter plots — are increasingly required to enter into contracts with large conditional discounts. It appears that households wishing to manage their energy costs are increasingly required to place larger ‘bets’ in the retail energy market. Lower cost energy is available, but if the customer fails to ‘win’ the bet, the cost of losing is increasing very significantly.

In 2014-15, customers could enter an electricity contract offering a 5 per cent discount. That contract would have cost around $1250. If they failed to meet the contract’s conditions (or if they failed to renew their contract on its expiry) they would find themselves paying an additional $66 on an annualised basis. These customers could save around $100 by shopping around because there were also discounted contracts available for around $1150. These contracts entailed a 30 per cent conditional discount but this higher discount meant that they would pay an additional $493 (annualised) if they failed to meet the conditions of their contract (or renew it on expiry). In choosing between these two contracts, customers could decide whether they would accept the more expensive but less risky contract; or whether they would pursue the savings (of $100) in return for accepting the risk of higher payment if they did not meet the conditions.

By 2015-16, the first of these two contracts had almost disappeared while heavily discounted contracts became even more heavily discounted. It was still possible to enter a contract for around $1150 but such contracts now entailed a 35 per cent conditional discount. So even though there was no change in price, the penalty for failing to meet the conditions of the contract (or renew it on expiry) had now increased to $619 (annually). The ‘penalty’ for failing to meet the contract’s conditions had increased by $126 (from $493 to $619).

These finding suggest that household customers looking to lower their energy costs are now being required to take bigger ‘bets’ on the retail energy market. However, despite placing bigger bets they are not being given better upside benefits in return for those bigger bets — after all, they are still paying $1150 for the cheapest offers in the market. All the additional risk has been loaded on the downside of their contracts. The cost of ‘losing’ can now be many hundreds of dollars over the course of a year (eg. $619).

‘Cheap’ contracts may still be available but the cost of ‘losing’ can be hundreds of dollars.

Why have low-cost, low risk contracts disappeared from the market? Why has there been a hollowing out of the lower left region of the scatter plot? Does this reflect a lack of demand by customers or a strategic withdrawal of supply by retailers?

While expected utility theory suggests customers shouldn’t be flocking to these risky, higher discount contacts (figure 3), clearly customers aren’t listening to economists — and clearly retailers are responding. Customers can avoid the risks associated with conditional market contracts and enter into unconditional contracts. Why they choose not to do so is explored in the following sections.
Figure 6(a) Scatter plot of average annual bills (4000 kWh) and level of discount in the Ausnet distribution zone in 2014-15

Figure 6(b) Scatter plot of average annual bills (4000 kWh) and level of discount in the Ausnet distribution zone in 2015-16
8.3 Why do customers enter conditional market contracts?

The discussion in section 8.1 ended querying why customers appear to eschew unconditional market contracts in favour of conditional market contracts even though unconditional contracts guarantee higher customer utility, \( U(X_M) > EU(X_B) \). We explore five possible explanations.

First, customers may not be acting rationally. Expected utility theory and indeed all of neoclassical economics assumes that customers will act rationally at all times — that is, they will seek to maximise their utility wherever possible. It is not clear why this assumption would not be germane to the retail energy market. That is, it is not clear why customers faced with two (or more) different types of contracts would choose to enter the contract that provided them with lower expected utility. We therefore consider this to be an unhelpful explanation.

Second, there are aspects of conditional market contracts, other than price, that serve to enhance customer utility. The analysis undertaken above assumes that all utility is derived solely from the consumption enabled by any surplus funds remaining in the ‘energy budget’ after the household’s energy has been purchased. Perhaps there are other factors enhancing customer welfare beyond these budgetary considerations. It is not evident what these factors may be or why they would derive only from conditional market contracts and not from unconditional market contracts as well. After all, the quality and reliability of the electricity and gas does not vary with the price paid.

Third, the determination of customer utility is a less precise exercise than suggested by the calculations shown above. Expected utility theory (or at least how it has been presented in this paper) upholds that there is a direct and unique relationship between the level of consumption and the utility it affords a customer. But this may not be the case. The utility function may not be so precise. In which case, a given level of consumption might provide an expected level of utility over a range of values (probably according to an assumed probability distribution function). Such a utility function would look similar to the one adopted in the figures above, but the sleek curves would become thicker and fuzzier. This would make it possible for there to be overlapping levels of utility for two different levels of consumption. While this explanation has some appeal, it undermines the explanatory (or predictive) power of expected utility theory.

Fourth, if marginal returns on consumption were to increase rather than diminish, the utility function would invert from being concave to convex. If this were the case, the line of expected utility outcomes would lie above the curve. Weighted outcomes such as the one associated with a conditional market contract would lie above the utility provided by the known outcome of an unconditional contract. In these circumstances, customers could prefer the higher risk contract. That is, customers could derive greater utility from taking risks rather than avoiding them. Consumers with convex utility functions are referred to as...
being ‘risk-seeking’. While risk-seeking behaviour has its place in explaining the choices customers make in certain circumstances, there does not appear to be an \textit{a priori} reason to expect such behaviour when it comes to the purchase of household energy.

Fifth, the portfolio model described above suggests that across their entire portfolios, retailers will seek to ensure that no more than a fixed proportion of their customers will be on discounted contracts at any point in time. This proportion is represented by the beta parameter (\(\beta\)). In the neoclassical tradition (of so-called, ‘rational expectations’) we would expect customers to be able to derive or accurately estimate beta (at least on average). We would also assume that they would know with high degree of certainty their own capacities to act in certain ways such as meeting the conditions required for a discount.

That said, we think it unlikely that customers would be able to estimate beta. Indeed, we think it is unlikely that they even give consideration to whether such parameters operate in the market. More significantly however, we consider that customers are very likely to over-estimate the likelihood that they will receive discounted prices on an ongoing basis — as per equation (14). To the extent they do so, they will over-estimate the expected utility to be derived from a conditional market contract; and if their self-confidence is sufficiently great, this error will lead them to expect greater utility from retailers’ conditional market contracts than from their unconditional contracts.

Of these five possible explanations, we believe the fifth explanation is the most intuitively appealing and the least contentious. We think it is reasonable to believe that customers will demonstrate the well-known cognitive bias of overconfidence discussed earlier. We think it is reasonable to assume that many or most customers enter into a conditional market contract expecting that they will do whatever needs to be done in order to maintain their discounts — including switching to another retailer if necessary.

Expected utility theory usefully explains how customers \textit{ought} to react to the portfolio pricing strategies of energy retailers. That customers do not quite do as the theory predicts, means that some of the assumptions underpinning the theory need to be loosened. Overconfidence seems to be the most intuitively and empirically appealing explanation. This overconfidence leads to the inertia discussed earlier and explored further in the next section which introduces behavioural economics to our analysis of the retail energy market.
9. **A VIEW FROM BEHAVIOURAL ECONOMICS**

In previous sections, we explored the consequences of retailers’ portfolio pricing strategies for customers in light of the inertia and overconfidence they might demonstrate. Inertia and overconfidence bias are well-documented phenomena in psychology and behavioural economics. This section turns to these disciplines for further insights into the behaviour of consumers and how this might affect their response to retailers’ portfolio pricing strategies — and indeed, how retailers’ strategies may be influenced by customers’ cognitive biases.

9.1 **The role of Choice**

There are valuable insights to be drawn from behavioural economics which focuses heavily on the role of choice and how choice is presented to people. While avoiding a detailed exposition on the merits or weaknesses of behavioural economics, this paper contends that there are important insights to be gained. In their seminal book, *Nudge. Improving Decisions about Health, Wealth, and Happiness* (2008), Thaler and Sunstein note:

> “First, never underestimate the power of inertia. Second, that power can be harnessed.” (p.9)

> “The first misconception is that it is possible to avoid influencing people’s choice. In many situations, some organisation or agent must make a choice that will affect the behaviour of some other people.” (p.10)

In other words, people are ‘creatures of habit’. They will tend to do what they have always done rather than confront having to question whether they ought to be doing something else. But habits are malleable. They can be altered by external influences. External forces can be inadvertent or deliberate. If another party can deliberately and successfully alter a ‘habit’, then the result can be to the benefit of one or both parties.20

The second quote indicates that anyone who is a party to a decision necessarily has some influence in that decision. Importantly, it implies that how a party seeks to exercise this influence will always be an active decision. Even a decision not to seek to influence another person’s decision, is an active decision because it represents an active withdrawal and the surrender of influence to other parties.

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20 Numerous governments have established ‘Nudge Policy Units’ to develop innovate means for altering the choices people make in ways that benefit the individual and society — without resorting to more heavy-handed or interventionary forms of regulation. Thaler and Sunstein offer numerous examples.
These observations are clearly pertinent to the retail energy market. In this market, the customer is the choice-maker (or habit former). Retailers are clearly trying to influence that choice or habit.

Retailers are vying against each other to influence customers’ choice. However, the reward is not just the purchase of energy. The real reward lies in the ‘inertia’ of which Thaler and Sunstein write. Because energy is a repeat purchase under retail contracts, retailers benefit from customer inertia — at least for as long as no new influence disturbs that equilibrium. Customers will effectively disengage from decision-making and let their earlier choice prevail for as long as they’re not compelled to make another choice.

After 15 years of full retail competition, we can see how retailers have responded to customer inertia. As this paper has shown, inertia has allowed retailers to:

- introduce discounts which are conditional on particular actions by customers during the life of the contract — typically, paying on time and agreeing to direct debit payment arrangements
- write market contracts that offer discounts which end after one or two years and though the customer continues to be serviced by the same retailer, the continuation of the discount (or a replacement discount) is contingent on the customer having to take some action (typically, phoning the retailer)
- elevate the headline value of conditional discounts (in percentage terms) to levels significantly above the retail margin they claim to be earning from the market
- develop methods that ensure customers ‘disappear’, meaning neither they nor an outside observer (eg. regulators) has any means for confirming how diligently the retailer in honouring its commitment to discounted prices, and
- developed techniques that encourage — or perhaps just don’t discourage — customer inertia. Earlier we referred to these actions as “inducing” inertia.

To be clear, we don’t consider there to be anything illegal or unnatural about these responses from retailers. They are acting precisely as might be expected in light of their commercial imperatives and in light of the discretion that the regulatory framework provides them. Indeed, regulators are also a party to the decision made by customers and retailers in the market. And, as acknowledged above, anyone who is a party to a decision necessarily has some influence in that decision. The question for regulators therefore becomes: In light of customers’ proclivity towards inertia and retailers’ observed response to that inertia (as listed in the preceding dot points), should regulators seek to exert greater influence in the transactions between customers and retailers?
Before turning to a discussion of regulators’ role in influencing customer inertia, we first seek answers from behavioural economics about why customers make the choices that we observe.

Section 8.3 concluded that traditional economic analysis could not deal comfortably with customers’ decision to enter conditional market contracts. Such choices could only be explained by weakening one-or-more of the neo-classical assumptions in the normative approach taken by expected utility theory. The following section turns to one of the most well-established tenets of behavioural economics — namely, prospect theory — to shed light on the question of why customers choose to enter conditional market contracts and the factors influencing such decisions.

9.2 What prospect theory reveals about the retail energy market

Expected utility theory is a normative theory that helps explain how people ought to make decisions in a rational way. Expected utility theory assumes that individuals’ attitudes towards risk are stable and independent of the circumstances in which decisions are being made. Experiments have shown that individuals will often make decisions that fail to accord with these assumptions of ‘rationality’. In 1979, Kahneman and Tversky published their seminal paper on ‘prospect theory’ (for which they won the Nobel Prize in Economics in 2002).\(^{21}\) Prospect Theory offered a descriptive theory of how people actually make decisions, rather than how they ought to be making those decisions. Since it was first published, prospect theory has helped explain why people make a variety of seemingly ‘irrational’ decisions in their daily lives. This section applies prospect theory to decisions being made by consumers in the retail energy market.

This paper is not the appropriate place for a detailed description of prospect theory but some of its more interesting features include:

- **Loss aversion.** Losses loom larger than gains — that is, the pain of losing exceeds the gain of winning. People gain positive ‘value’ from gains and negative ‘value’ from losses but their response to loss is more extreme than their response to gains of the same magnitude.

- **Asymmetry.** People tend to be risk averse for gains. They would rather ‘bank’ an assured, lesser amount than take the chance of winning more. The opposite is true when dealing with certain losses. People will engage in risk-seeking behaviour to avoid bigger losses.

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• **Reference point.** How a decision is presented (or ‘framed’) affects how individuals respond. That is, the reference point from which a decision is made directly affects that decision. The reference point is determined by factors such as the decision-maker’s circumstances, how information is presented and the order in which it is presented. In direct contrast to expected utility theory, altering how a decision is framed can lead people to make different choices.

**Box 2  Prospect theory in action**

Kahneman and Tversky presented participants with two scenarios. In both scenarios, people were given an initial amount of money, and then had to choose between two alternatives. Scenario 1: Participants started with $1000. They then could choose between winning $1000 with a 50 per cent probability (and winning $0 with a 50 per cent probability), or getting another $500 for sure. In scenario 2, participants started with $2000. They then could choose between losing $1000 with a 50 per cent probability (and losing $0 with a 50 per cent probability), or losing $500 for sure. Kahneman and Tversky found that people made opposite choices in the two scenarios: the majority chose the risk-averse option in Scenario 1 and the loss-averse option in scenario 2.

The prospect theory value function is given by:

\[
V(\Delta X) = \begin{cases} 
(\Delta X)^\phi & \text{if } \Delta X > 0 \\
-A.(\Delta X)^\phi & \text{if } \Delta X < 0
\end{cases}
\]

where \(0 < \phi < 1\) and \(A > 0\)

\(\Delta X\) represents the change in consumption

\(V(\Delta X)\) represent the value gained or lost from that change in consumption

In their work, Kahneman and Tversky found that \(A = 2.25\) — meaning that for quantitatively equal losses and gains (\(\pm \Delta X\)), the sense of loss is broadly double the sense of gain. Graphically, prospect theory is represented by the value function shown in figure 7. The origin represents the decision maker’s reference point. From that point, gains lead to positive value while losses lead to negative value. Then negative value experienced from losses increase more rapidly than the positive value from gains. The value function is concave for gains and convex for losses.
The importance of framing in prospect theory cannot be understated. As Box 2 demonstrates, how a decision manifests itself can completely alter the manner in which the decision maker engages with, and solves, that problem. Alternatively stated, the decision maker’s decision will depend on whether movement from the reference point is viewed as a gain or as a loss. It is this particular feature of prospect theory that can help explain why consumers enter into contracts that appear to be suboptimal when viewed through the lens of expected utility theory.

Figure 8a shows the case where consumers enter the market expecting to pay a high price (affording consumption \(X_U\)) and any discount achieved thereafter is viewed as a gain. In this circumstance, just as with expected utility theory, consumers would rather enter an unconditional contract (at \(X_M\)) rather than take their chances with a conditional contract (at \(X_\beta\)). As shown in figure 8a, the value obtained from the gain of moving to an unconditional market contract is greater than the value gained from moving to a conditional contract.

Figure 8b shows the contrary case where consumers enter the market viewing the discounted price (or rather the consumption it affords, \(X_D\)) as their reference point. Failure to take advantage of the conditional discount produces the loss of value shown at \(X_U\). Consumer’s aversion to losses — that is, the convexity of the curve over losses — means that they would rather take their chances with the conditional contract (at \(X_\beta\)) than enter into an unconditional contract (at \(X_M\)) where the price is known. Consumers would rather take a ‘punt’ on a conditional market contract than incur a known loss on an unconditional contract.
Figure 8a  Gains from discounted prices when the undiscounted price forms the reference point

Figure 8b  Losses from undiscounted prices when the discounted price forms the reference point
This willingness to ‘bet’ on the retail energy market does not rely on consumers overestimating the likelihood that they will continue to benefit from discounted prices — that is, a preference for a conditional market contract does not rely on a consumer overconfidence when estimating the value of $\beta$ as was required with expected utility theory. In this sense, prospect theory appears to offer a better explanation than expected utility theory of customers’ willingness to enter conditional market contracts.\textsuperscript{22}

Even though an aversion to losses, as represented by figure 8b appears to explain customers’ preference for conditional contracts, a number of questions remain unanswered.

Why does one reference point dominate another? Why do customers see purchasing energy as a loss to be avoided, rather than a gain to be attained? What influences bear on customers’ view of the retail energy market and the reference point they adopt when entering into contracts?

We believe the answers to these questions are all related, and the outcome is no accident.

As discussed earlier, the retail energy market has been evolving (in Victoria) over the last 15-or-so years. Retailers’ pricing strategies have broadly followed the path described in section 3 and the vast majority of customers have now experienced the retail energy market — with 93 per cent of household now on market contracts for their electricity. In the meantime, and unlike few other sectors, the energy sector has been the subject of almost continuous analysis by regulators (and others), media scrutiny and political commentary. Much of the coverage and commentary on retail matters relates to the price of energy for households (and small businesses). And, much of that discussion has been about the effect of increasing prices on customers — particularly over the last seven or eight years.

In response, energy retailers and regulators alike have offered the reassuring message that consumers can save considerable amounts of money by shopping around and finding contracts involving very attractive discounts. By continually reinforcing this message, retailers and regulators have established a narrative with consumers that prices are only high (or at least higher than they need to be) if they don’t take advantage of the offers available to them. As the magnitude of the headline discounts has increased in recent times this has served to make regulators’ message seemingly more self-evident — the market is competitive and it delivers considerable savings. No-one need pay very high prices. No-one should pay very high prices. No-one should expect to pay very high prices.

\textsuperscript{22} In the event that the customer was extremely pessimistic (or under-confident) about their chances of maintaining their discount — that is, where $E_i(\beta_i) << \beta$ — it may be possible that $V(X_{\beta})$ is more negative than $V(X_{\beta_i})$ in which case the customer would not choose the conditional market contract. The circumstances under which such a situation might eventuate are not self-evident.
As one market regulator wrote:\textsuperscript{23,24}

\begin{quote}
"Some take the view that if you pay more because you don’t shop around, the market isn’t working. We consider that if you can pay a lower price by shopping around, the market is working."
\end{quote}

Clearly, customers can shop around. Clearly, they can pay lower prices from doing so. Therefore, the regulators’ message concludes that the market must be working to the benefit of customers. In other words: Discounted prices are there for the taking and customers who fail to shop around have, for all intents and purposes, chosen to opt-out of the market. According to this message, discounted prices are the default. They are the reference point.

From this reference point, there are only losses to be made as any other contract will be offered at a higher headline price. With only losses to be made from this reference point, customers’ loss aversion will see them ‘gamble’ on conditional contracts rather than purchase unconditional market contracts with the known losses they deliver.

The significance of this finding is profound.

Regulators have acted in concert with retailers to ‘frame’ the market around a very particular reference point — one that encourages customers to ‘gamble’ on their retail energy contracts. Regulators have encouraged customers to enter into contracts where the interests of the customer and the interests of the retailer are not aligned. Indeed, they are pitted against each other.

\textsuperscript{23} Independent Pricing and Regulatory Tribunal (2016) \textit{Review of the performance and competitiveness of the retail electricity market in NSW. From 1 July 2015 to 30 June 2016. Draft Report.} (September)

\textsuperscript{24} A similar view was expressed by Littlechild (2014) in his criticism of the UK regulator. “[Ofgem] previously argued that ‘you pay a lower price if you shop around, so the market is working’. Now it argued that ‘you pay a higher price if you don’t shop around, so the market is not working.’ The glass was now half-empty rather than half-full.”
10. CONCLUSION

Since prices were deregulated over 15 years ago, the Victorian retail energy market has evolved dynamically. In its most recent form, the market’s most notable feature is the proliferation of very heavily discounted offers available to customer. This paper has sought to reconcile the presence of such heavy discounts with the conventional view that retailers’ margins are really quite small.

Rather than modelling price as a single value, this paper uses a portfolio pricing model to capture the various prices (and contract types) currently available in the market. The model predicts that as discounting strategies become more aggressive, retailers must also pursue more aggressive strategies to manage their portfolios of customer accounts. Retailers can only afford to offer ever larger headline discounts by ensuring ever fewer customers are receiving the benefit of those discounts.

In today’s retail energy markets, large discounts resemble bets that can only be won by the customer outwitting the retailer. Of course, retailers are not passive actors in this market and they pursue a range of strategies to manage their exposures. Expected utility theory suggests customers should aver such gambles. Clearly, the theory’s prediction is not supported in practice. Discounted offers are clearly very popular. Other analytical tools are therefore required to understand the choices customers are making in the retail energy market.

Prospect theory fills the gap. It suggests that customers’ choices will depend on how those choices are ‘framed’. For customers to embrace taking risky positions in the retail energy market, they must perceive their decisions as leading to losses to be avoided rather than gains to be made. Regulators clearly play an important role in framing the market and therefore the decisions customers are making.

The models developed in this paper are simple expositions of the economic theories on which they rely. They purport to be nothing else. Nevertheless, the results they produce challenge many conventional views about the retail energy market that demand further consideration.

While this paper focuses on the economic foundations of these findings, an accompanying paper, *Do discount wars benefit retail energy customers? Don’t bet on it*, explores the implications of these findings for customers, the state of competition and regulators. That paper also proposes a number of regulatory interventions intended to restore alignment between the actions of retailers and the interests of their customers.
APPENDIX A: THE NUMBER OF RETAILERS AND THEIR MARKET SHARE

Number of retailers by number of customers – Electricity

Market Share by number of customers – Electricity