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Dear Retail Policy Interventions Team

Consultation response – Market Stabilisation Charge

Please find enclosed a contribution to the consultation, which is not confidential.

This paper is intended to support the debate, with the specific aim of exploring some of the hedging technicalities in the context of the prevailing legal and regulatory architecture. Legal interpretations are necessary in informing hedging and thence the proposal. Those made here are in the centre ground and could (and no doubt will) be argued in either direction, but are here treated as working assumptions.

The views are my own and may or may not reflect the views of London Business School.

Yours sincerely



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Summary

The background is the relationships between the rises in wholesale prices, the tariff cap, affordability of energy bills, a severe financial problem in the energy supply sector, supplier exits in default, and mutualisation of defaults. There is a significant prospect of further supply market destabilisation unless action is taken. One potential action under consultation¹ is the regulatory imposition of a Market Stabilisation Charge (MSC) paid by gaining supplier to losing supplier in lieu of stranded hedge costs.

The same consultation considers the possibility of suppliers charging exit fees for Standard Variable Tariffs. This is very similar to the MSC and is considered here.

Changes to the Supply of Last Resort claiming in the “levy” are also under debate. The interaction of this with the MSC is briefly considered.

The broad conclusion is that notwithstanding that the MSC proposal is diametrically opposed to the regulator’s longstanding approach to switching, that it has merit in the current circumstances. This is largely because the alternatives are limited, desperate times need desperate and urgent measures, and the volume option issue of the cap needs addressing to maintain market stability. It would be a radical intervention, apparently untested in any sector in any country. Indeed, if executed by industry agreement rather than by regulation, it would infringe competition law. Since the legal architecture and the risk management principles interact strongly, and both are highly uncertain in their own right, the prospects of achieving agreed and accurate quantitative levels, for example on the MSC, is very challenging. Transparency, robustness and workability should therefore take precedent.

Setting the MSC (or the total of SVT exit fee and MSC) at the difference between cap index and prevailing forward market seems to be the most robust, transparent and workable, and in addition contends with the volume option not fully incorporated in the cap. For this reason, it seems best not to have a loss trigger but to implement the policy forthwith. Furthermore since the risk addressed extends as long as the cap does, then the MSC should probably be enduring, and repealed if and when the cap is ended or otherwise has a structure that does not incur volume risk.

The MSC, the SVT exit fee, and the ex post levy claim could be effective as a coordinated package.

¹ <https://www.ofgem.gov.uk/publications/statutory-consultation-potential-short-term-interventions-address-risks-consumers-market-volatility>

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1 The situation

The regulator faces a significant problem. Supplier approaches to risk, supplier defaults, mutualisation of default costs, wholesale price increases, and the price cap, are all interacting in a manner that spirals. This is causing financial problems for suppliers *and* affordability problems for consumers. Given the current status of the aggregate hedges of suppliers, the April 2022 price cap is too high for affordability² but too low for supplier cost recovery. The simplified spiral is shown below. The *volatility* of global gas markets has accelerated the spiral and the *level* of gas prices increases the problem of Fuel Poverty.

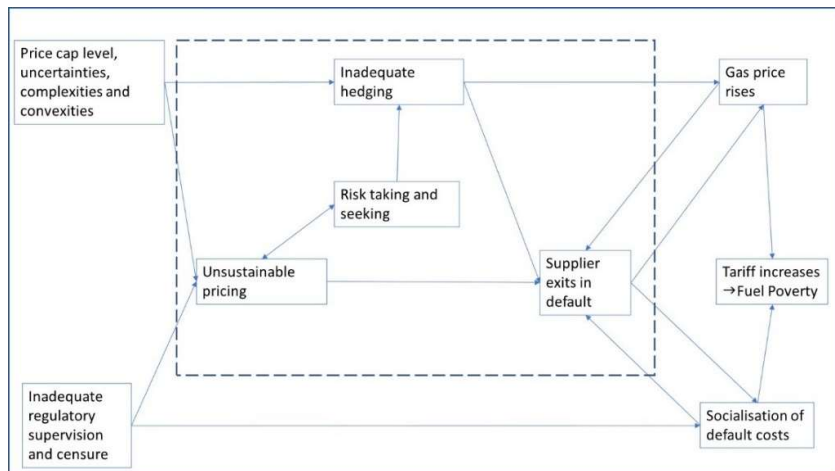


Figure 1 A view of the relationship between the cap, hedging, defaults and affordability

There are additional issues.

One issue is the potential stranding of consumers with no supplier, following disorderly³ supplier exit and licence revocation. The legal and regulatory architecture was not designed for this situation⁴ and has not been updated to contend with it. Ofgem must find suppliers for the customers of exited suppliers, but cannot force⁵ suppliers to be Supplier of Last Resort (SOLR) without allowing supply costs in the SOLR tariff, and otherwise awarding supply costs via the “levy”⁶. The wholesale costs in particular are now large and indeterminate in terms of level, volume and duration into the future. The backstop of Special Administration is only now being tested for the first time, and was designed for single “too big to fail” supplier defaults, rather than the management of multiple exits.

Another issue is the locking in of consumers to their supplier, since the potentially gaining suppliers’ duty to offer terms does not require offer at Standard Variable Tariff (which is capped).

² The Fuel Poverty gap looks likely to more than double, for a potentially protracted period

³ “Disorderly” generally means in default of debts and other obligations. Not all exits have been disorderly. For example Bristol Energy exited in an orderly manner

⁴ NB, views differ. E.g. on 24 Nov 2021 Secretary of State Kwasi Kwarteng stated in Parliament “we also have the special administration regime, which was designed precisely to deal with situations such as the one we are now in”

⁵ See SLC8 in the latest version of electricity supply licence conditions

<https://epr.ofgem.gov.uk/Content/Documents/Electricity%20Supply%20Standard%20Licence%20Conditions%20Consolidated%20-%20Current%20Version.pdf>

⁶ For the supplier claim see SLC9 *ibid*

Another issue is the difficulty/impossibility of hedging the risk of suppliers to changing volume, i.e. an element of the volume risk. The allowance for this in the cap is now seriously deficient and not resolved by the periodic cap indexation. This has the potential to accelerate the spiral of defaults and mutualisation. Creative solutions are therefore required.

Finally, the setting of the cap has been highly contentious and has already been the subject of one Judicial Review⁷ in relation to consultation on hedging. Notwithstanding the enormous potential of energy retail in the UK, contention in the regulatory environment may act as a deterrent to new investment. The hedge environment is now considerably more complex than that at the time of setting the cap level and structure. The science of hedging in retail is relatively inaccessible, especially in electricity, and yet the MSC must be accessible, robust, and as accurate as possible. This presents real challenges in consultation and implementation, but both are possible.

⁷ <https://www.bailii.org/ew/cases/EWHC/Admin/2019/3048.html>

2 The key risk that the proposal addresses

The development of the tariff cap level lags the forward wholesale market development. Hence the full effect of the wholesale price rise has not yet been felt in the cap. As the wholesale price falls, the fall in the cap will be lagged, such that the competitive market tariff falls below the cap. Consumers can buy the cheaper of the cap or the competitive rate. i.e. they have a “long” option position. The suppliers have corresponding “short” option positions. The effect of this during wholesale market rise and fall is shown schematically in the figure below. The value of this option is large but it is not incorporated in the cap. We will see later in this paper that the forward curve *structure* and the forward curve *movement* are closely related and must be considered both separately and together.

The short volume option situation is depicted below, somewhat conflating the market structure and market movement effects.

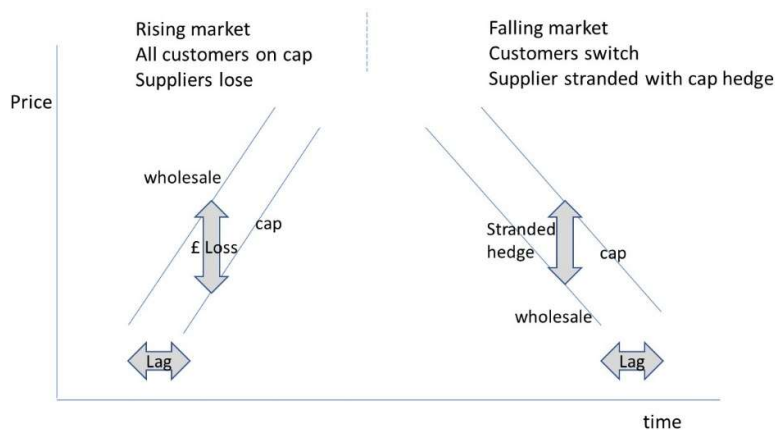


Figure 2 Schematic of the supplier exposures in the rising and then falling markets

This in turn could lead to severe financial losses for all suppliers with a substantial percentage of their supply capped (which is nearly all supply). This in turn has the potential to accelerate the default-mutualisation spiral to some form of final denouement of the energy supply market in the UK. The defaults, and the mutualisations, affect *consumers*. At the heart of the situation is the construction and level of the price cap.

A short volume option cannot be sustained because the capital cost of it was not designed in to the cap. The logic of the Competition and Markets Authority⁸ margin of 1.25% before interest and tax (the EBIT margin) did not take this risk into account and we must then assume that there is not the capital ballast for suppliers to absorb hedge liquidation costs without a revenue stream to do so with. The cap took forward similar logic to the CMA and did not contend with this volume risk. The implication is clear that to defend the UK aggregate hedge that the individual suppliers' hedges must be defended.

Creative solutions are required, and the current proposal is a potential one, as it would have the effect of stabilising the supply market – hence the term Market Stabilisation.

The proposal under statutory consultation is that when wholesale prices have fallen to a designated level (the “Losing Supplier Loss Trigger”), gaining suppliers pay losing suppliers

⁸ <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf>

a “Market Stabilisation Charge” to compensate for part of the cost of the hedge that becomes stranded on loss of customer.

This open hedge element of the MSC is shown schematically below with the MSC set at full recovery of stranded hedge liquidation. The consultation allows for partial recovery.

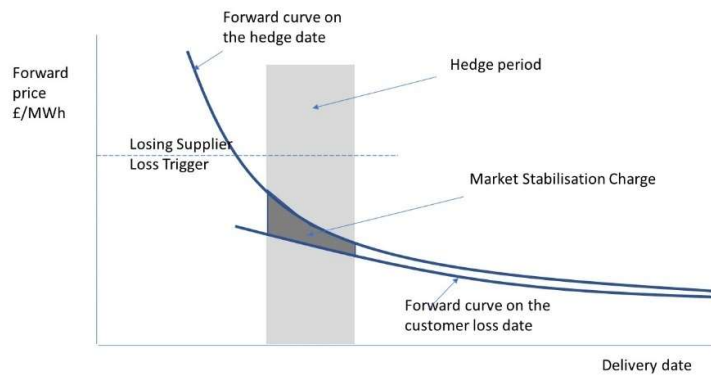


Figure 3 The open hedge only Market Stabilisation Charge for a single customer loss, when the forward market has fallen

As we will show below, this still leaves open the issue of the volume option that suppliers are maintaining on behalf of consumers, but with the cost of this not covered in the cap. This can be addressed, as explained below, by a simple MSC that is set at the differential between cap index and forward wholesale market.

The new licence condition SLC24A, is currently proposed to lapse on 30th September 2022 (the day before the October 2022 cap begins) or such later date that Ofgem may later determine, to a backstop date of 31st March 2023 (presumably referring to the notification date from gaining to losing supplier).

The proposal cites a purpose of reducing the mutualisation costs of Supplier of Last Resort and Special Administration procedures that allocate default costs, and reducing the prospective loss of supply market liquidity. Potential effects can be; i) reduce the prospect of number and size of defaults, ii) reduce the amount of default, iii) accelerate the re-opening of market liquidity in tariffs.

3 Discussion of the MSC

3.1 Core circumstance to address

In the very simplest circumstance, if there is no switching, suppliers hedge “perfectly”, the wholesale market has a very simple structure, consumption volumes are flat and constant, and there is no bad debt, then we do not have a *supplier* solvency problem – we just have a consumer *affordability* problem, as the cap follows the wholesale market.

These assumptions are of course not true in practice but we do need to start with them in order to gain an intuitive assumption of the situation, and relax the assumptions one by one.

The principal assumption to relax when considering the MSC is the switching assumption.

Consider the position of a supplier who supplies Standard Variable Tariff, which is capped. Suppose that the supplier has executed the perfect hedge for a low cap with no switching and no risk to changing consumption levels. The supplier then loses the customer to another supplier and hence the hedge for that customer is stranded and must be liquidated. This is an element of the volume risk.

We have four financial considerations; i) the *level* of the cap relative to the level at which the perfectly hedged supplier precisely covers costs including cost of capital – we express this as uplift U , with $U=0$ for precise cost recovery and $U<0$ for locking in financial losses for suppliers, ii) historic losses from volume risk including those in which the supplier bought at higher prices and had to sell back at lower prices⁹, iii) the mark to market value of the open hedge position, iv) the forward expected trajectory of supplier margin according to its pricing strategy, possibly without a cap or being able to price below the cap.

Circumstances of concern are;

- i) Accrued losses from supplying at the cap, due to negative uplift U and volume risk hedges. A sensible supply strategy is to stay out of the market until daily accrued profits are possible (by a raising of the cap or the falling of wholesale hedge costs) and then swoop in. The issue here is regulatory moral hazard. Suppliers would have been bound to supply even at a loss and the opportunity to recoup loss would be lost. Such a regulatory strategy would not have given due regard to the need of suppliers to be able to finance their licensed activity. For the market to operate with such regulatory moral hazard would substantially chill entry into the market, and stimulate exit (including disorderly exit), and would not be good for consumers. The MSC can capture this by setting at the differential between cap index and forward market.
- ii) Stranded hedges. At a future point in the market where the hedge may be “out of the money” (i.e. having a liquidation cost) and the prevailing near term market being below the cap, then continued supply protects the hedge that was instigated by responsible suppliers to protect the supply to customers. Loss of supply leaves the hedge unprotected and hence this creates a very strong force to hedge inadequately or not at all, thereby incurring risk and cost¹⁰ to consumers. The MSC protects and therefore sustains the hedge. This is the open hedge element of the MSC which, on

⁹ This convexity risk arises from both the switch volume risk and the customer consumption volume risk. In order not to make this long paper even longer, it is not addressed here, but it is important

¹⁰ With the entirety of UK volume bought hand to mouth live in the short term market, the attenuation of market depth with decreasing hedge horizon causes increase in cost expectation as well as increase in risk

omission of volume option risk, could implemented standalone, albeit at the expense of considerable complexity.

We can divide these circumstances neatly in terms of the closed and open hedge periods.

In the former we have two distinct causes of loss. One is the setting of the cap low ($U < 0$) even in the absence of volume risk. This is important and relevant in consideration of the MSC. However there is no agreement on U and hence this is analytically intractable. All we say here is that a long series of supplier exits, and minimal/negative aggregate supplier profit is anecdotal evidence of $U < 0$ ¹¹. An MSC for open hedge only would omit the accrued losses and this is a driver not to set the MSC low. The second cause of loss, that has become very relevant, is the accrued loss from volume risk. Suppliers must re hedge and over time the risk convexity means that they accrue costs not visible in the open hedge or estimated closed hedge. This can be captured in wholesale cost adjustments to the cap without getting into a debate about non wholesale costs. The convexity risk for the supply sector in aggregate is complex and somewhat intractable. We therefore treat this as just another driver not to underestimate the MSC.

The latter is the open hedge.

If the forward market is completely static, then since the forward reference period extends beyond the cap delivery period, then if the wholesale market is in backwardation¹², the cap will be below the cost for unhedged supply. If the market had been in backwardation at the time of setting the cap, then this would have been taken into account in setting the level. However the market was not strongly backwardated at the time. The perfectly hedged supplier would be hedged against development of backwardation.

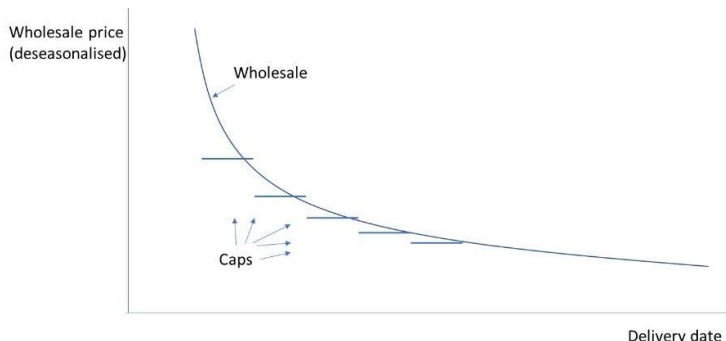


Figure 4 Cap projections for a given forward curve

Due to the cap lying below the forward curve, supply at the cap is therefore currently unattractive. However, supply of (uncapped) Fixed Term Contract may be attractive to both supplier and consumer. Attractive to the supplier because the margin can turn positive due to the cheaper forward prices with the market in backwardation, and hedge stranding risk that can be controlled with exit fees. Attractive to the consumer because short term tariff is reduced (at the expense of longer term, but with a flatter profile overall).

We can see this below. By engaging in a long term FTC, the consumer can gain supply below the near term cap by accepting a price higher than the wholesale market (and cap) later on. Indeed a consumer with an absolute *requirement for energy* (for example for health) but a *budget constraint* for energy, might effectively be forced to take this choice.

¹¹ In the absence of moral hazard, the optimum hedge for $U < 0$ is almost the same as the hedge for $U = 0$

¹² The reverse is the case for contango. For a market on an observation date to be part contango and part backwardation does happen but is rare and not considered here

Note that the consumer is effectively buying at the forward curve and then borrowing¹³ money from the supplier in order to flatten the *payment* profile and the implied borrowing rate is much cheaper than other borrowing choices for the consumer.

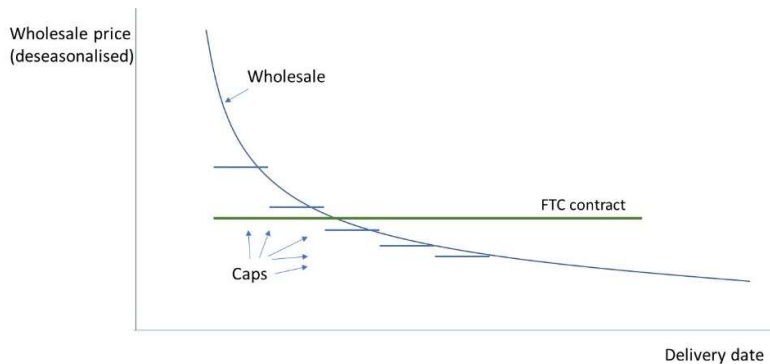


Figure 5 Switching to Fixed Term Contract that is below the near term cap and above the long term one

3.2 What the MSC does and does not do

By far the most significant effect of the MSC is to do what it says – *stabilise the market*, that has impending further instability. By protecting the hedge of the losing supplier, the hedge is enabled and the moral hazard from not hedging is reduced. The likelihood and extent of supplier future large financial losses is reduced. This flows to lower mutualisation costs for consumers, and attenuation of spiral effects.

By enabling hedging, the total UK gas hedge in volume and duration is increased, thereby reducing the national¹⁴ consumer exposure to wholesale gas prices.

For unhedged suppliers there are two distinct protection regimes. The first is that the supplier simply takes on the risk and continues to supply regardless of the cost of energy. If there is such a situation, with absolutely surety of the fulfilment of contingent liabilities, then the supplier is providing a volume option and therefore should receive the same MSC as an unhedged supplier. However, in practice for there to be strong governance of contingent liabilities but no governance of risk management is not a consistent position and we can ignore it. Other suppliers do not underwrite the volume risk and exit if prices rise.

The indication is clear then, that the payment of MSC is tied to financial surety. One item of evidence is actual hedging, as evidenced by the prevailing open position. So, for example if a supplier is 20% hedged then they get 20% of the MSC. A lower MSC represents a lighter barrier to switching from a supplier at higher risk of default, and hence this attenuation has a market stabilising effect since default risk is reduced by the switch.

3.2.1 Addressing volume risk with the MSC

The hedge strategy for low cap ($U \sim 0$) is;

¹³ There is an implied interest rate in all flat forward contracts in markets with slopes

¹⁴ This is very high because large volumes are bought in high correlation with each other, in a short term market with limited price elasticity. For a bit more detail see https://www.sustainabilityfirst.org.uk/images/Energy_supply_prices_-_technical_paper_November_2021_FINAL.pdf

- i) At the time of the cap index setting, buy 100% of MWh supply volume for each cap delivery period
- ii) At the same time, sell 100% of supply volume for each reference period. Since this is twice as long as the cap, the MW volume is 50% of supply
- iii) Due to netting off we are left with a long hedge in the first period for 50% of volume and a short hedge in the period after the last cap for 50% of volume. We ignore the latter hedge here since in the schematic the forward market does not move for it
- iv) As the first 182 day observation period begins, each day buy 1/182 of the MWh supply volume for the reference period, so 50% of the MW volume. When the observation ends we are left with 100% of supply volume in the cap period and 50% in the remainder of the reference period which is the next cap period. As each new observation period begins for the next cap period, continue the daily hedging for the new reference period.
- v) This leaves us perfectly hedged if supply volume is constant

The development is shown below.

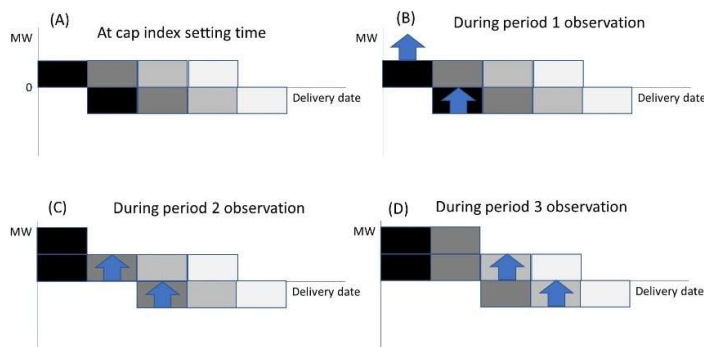


Figure 6 Development of hedges through the cap periods

Note that the observation periods are 6 months and the cap periods 6 months so every day we buy one day's amount of consumption in MWh and each 6 months the contract we buy steps forward by 6 months.

Consider the situation where the cap index structure was set with $U=0$ at the time of a level forward market. The market then rises some time between then and the start of the first observation period, stays still during the observation period, and then plunges down in one day and stays still during the cap delivery period.

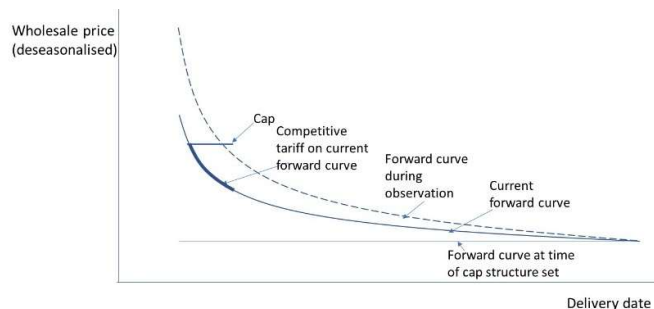


Figure 7 Rise of the market to set the cap, following by fall of the market below the cap

Now consider the profit and loss.

This is depicted below in mark to market profit and loss terms for the first cap period. The market is drawn with straight lines for ease of illustration. For more accurate illustration the forward contracts are shown not as flat price across the contract but each element trading at market so the prices differ across the contract.

In (A) the first cap can be seen from the forward curve of the reference period during the delivery period. With a straight line backwardation the average forward price over the reference period can readily be read from the slope.

In (B) we see the mark to market on the supply period hedge done at cap index set date. The net volume is 50% of supply.

In (C) we see the mark to market of part of the reference period hedge done during observation. The volume is 50% of supply.

In (D) we see the mark to market of the other part of the reference period hedge done during observation. The volume is 50% of supply. For completeness the loss on the short hedge done at cap index setting time is shown in lighter shade. As shown in figure 6, this disappears for all but the last period when all the cap period hedges are added together.

In (E) we see the mark to market value of selling the cap period hedges (i.e. the 50% done at cap setting time plus the 50% done during observation) at the cap instead of liquidating at market. This is the key element of volume risk as this disappears if supply is lost

In (F) we see the mark to market of all future cap periods. The cap lies below the forward market in the whole of the backwardated region. The risk of increasing backwardation was covered by the hedge at cap index time. Being long in the near term period and short in the long term period, this is called a calendar spread. If the supplier has no hedge and no capital then this is defaulted on when the supplier exits. The supplier saves money if the customer is lost.

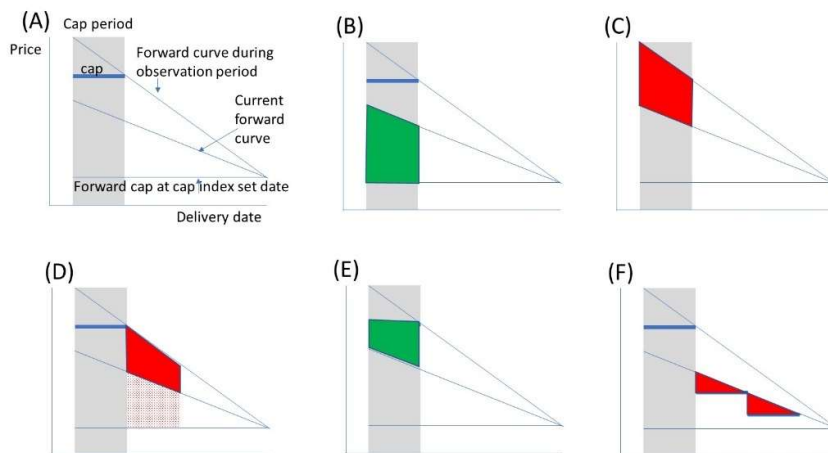


Figure 8 Profit and loss elements of cap hedge and cap delivery. See text

The key point here is that the supplier is perfectly hedged and breaks even if the cap was set with uplift $U=0$. However if supply is lost between the end of observation and the beginning of delivery then the hedge (E) is stranded. The future loss (F) also disappears.

Formally, the theoretical hedge for the 6 months after the last cap period should be considered.

The stranded hedge cost is the difference between cap and market. We don't need to worry about the actual hedge cost.

So the theoretical MSC is measured using market observables without looking at the actual supplier position. It is equal to the discounted difference between cap and market from the point of loss of supply to the end of the final cap period. In practical terms, the longer periods could be omitted because forward curve curvatures¹⁵ are strong and discounting¹⁶ comes into play.

What if the MSC is set below this? The supplier with capital consistent with the CMA cost of capital recommended in the EBIT margin cannot take the risk of hedge stranding and associated cash cost of liquidation. They then have to under hedge. Then (with inadequate capital as indicated by the cost of capital) they cannot afford to buy if the market rises because a cash loss is sustained by buying at market and selling at the cap. So they exit in default.

We can see that the MSC addresses the volume option. If not addressed then the moral hazard is that suppliers may replicate the volume option by not hedging and exiting the market if it rises and not paying for the raft of obligations. The anecdotal evidence is that the moral hazard has indeed played out so far and hence needs to be avoided for the future.

3.3 Interaction with other regulatory interventions

The SVT exit fee and the MSC both entail the gaining supplier giving money to the losing supplier. Indeed, if only one of these is enacted, they both converge on the same value because the exit fee covers the stranded hedge cost and the cost of the volume option.

The moral hazard of the supplier over estimating, or the regulator under estimating the difference between cap and forward market is limited.

The moral hazard of just calculating the open hedge liquidation cost is much greater. The supplier could charge an exit fee far above stranded hedge cost, or Ofgem may pitch the MSC far below stranded hedge cost. Both have at least three degrees of freedom (hedge start date, loss notification date, hedge duration) and hence have highly complex structures. To install both regulatory architectures at the same time is cumbersome but may have the merit of ongoing regulatory flexibility when both are in place. For example Ofgem might construct a stranded hedge cost (SHC) matrix, and then indicate that any supplier who imposes $SVT > SHC - MSC$ can expect regulatory attention, in a similar two stage enforcement process that was done following the Retail Market Review price discrimination licence conditions.

A ban on closed tariffs is certainly with the grain of regulation, and has the ostensible benefit of reducing the incidence of closed tariffs that are frowned on, such as new customer only tariffs (incurring loyalty penalty). There may be unintended consequences such as the protection of specific customer cohorts by restricting tariffs to them only, for example social tariffs with centralised funding. This is not examined further here.

The cap itself in the period to the end of 2023, is under consultation. It is widely viewed that the cap under-priced a number of factors, most notably now the volume risk. Hence we ought to expect the *level* to change, which, as explained below, changes the *hedge*. It is

¹⁵ In theory, the exponential function. In practice a power law

¹⁶ In theory, the average discount using cost of capital. By convention, the "risk free rate" is commonly used for discounting since it is well characterised

possible that the indexation may also change¹⁷. As explained below, suppliers have a net short position from the cap index, but it is more than possible to have a cap structure which gives suppliers a net *long* position¹⁸. These are major uncertainties, and all uncertainties shorten the cap hedge. Possible changes to the cap level and structure are ignored in this paper, as it is very long already.

3.4 Effects of the termination date of the MSC

The radical nature of the intervention necessitates a restriction of its duration. The very short period of its action does limit its effect to the very specific one of dealing with the issue of the market ascending and descending in short order. There is the implicit assumption that the forward market slope is not in steep backwardation in September 2022.

Suppose for a moment that the sunset date is absolutely certain. Gaining suppliers then know that they lose the hedge protection, and are then likely to hedge shorter and compete less actively for gains before the sunset. Suppliers of Last Resort can claim more in the levy, thereby raising consumer costs overall. A short period MSC has more effect than no MSC but less than a longer period MSC. A longer period one, to March or September 2023 say, should be considered. This would contend with the fact that the existence, high level structure, indexation structure and level of the cap post 2023 are not known.

An uncertain extension of MSC date will not be priced in to a lower tariff by the gaining supplier. But the SOLR levy claim remains high because the date might not be extended. The uncertain date therefore encourages the levy claim to have an ex post true up in order to reduce the ex-ante claim. We already have two date uncertainties; i) the annual Ofgem recommendation in relation to cap extension, ii) the primary legislation to cap extension. A third uncertainty, of MSC sunset, is not helpful. This can all be ravelled into one uncertainty, by moving early to lay new primary legislation, moving early to correct the cap level upwards at least on some kind of trajectory, by abandoning the annual recommendation by Ofgem to the Secretary of State that was inevitably a foregone conclusion¹⁹, and by having an MSC sunset that is either certain or tied to the end of the cap.

3.5 The effect of the MSC on the hedge

The greater the recognition of hedge in the MSC to stabilise the market, the greater the hedge and hence (generally) the higher the open hedge element of the MSC. This positive feedback iterates to a stable solution rather than spirals away, especially if the maximum MSC hedge tenor is limited.

3.6 Accuracy of the MSC

Cap projection and forward market estimation is relatively straightforward before considering elements such as seasonality. Since the cap is indexed to the market, then the error is largely limited to estimation of market slope.

An open hedge calculation excessively crude, for example a published flat fee, would be so crude as to be unfit for purpose. i.e. it would not defend hedges and would therefore not

¹⁷ Upwards. However, however history is littered with price caps below costs, and we already see this recently in France, following similar (with different causes) in California and Texas. So anything is possible.

¹⁸ This is explained in more detail in Harris (2006) "Electricity Markets" Wiley pp93-99

¹⁹ The conditions for not extending the cap were effectively precluded by the existence of the cap

stabilise the market *and* it would chill competition other than for the most sophisticated consumers.

A crude calculation would certainly not be fit for purpose for the Supplier of Last Resort. A bespoke hedge for the SOLR could be applied, but (deemed) SVT exit fee and ex post levy true up can act in concert to reduce the issues.

3.7 [Publication of the MSC](#)

Consumers and gaining suppliers would need to have an idea of the MSC to even get to indicative quotation stage. A complete absence of knowledge until final quotation would have a strongly chilling effect on competition.

Normally the calculation of stranded hedge cost would be highly complicated due to the number of degrees of freedom. However, in the current circumstances in early 2022 for the April 2022 cap, there is a fairly clear benchmark, as we can take as a working assumption; i) that all customers are on the cap, ii) that all suppliers have hedged the cap as a low cap. The forward price history is known then the regulator could, if it wished to do an open hedge only MSC, publish an indicative MSC matrix every day. For example different consumption levels would have different stranded cost multipliers relative to median consumption.

With the MSC being crude, it may be necessary to have an *additional* SVT exit fee. This is clearly known to customers as it is clear on contracts, and therefore conveyable to potentially gaining suppliers. The low cap assumption is conservative (i.e. places the MSC at upper bound for this factor) but the volume risk is unaccounted for in this simple approach (so places the MSC at lower bound for this factor).

3.8 [The loss trigger](#)

Having the option not to trigger an intervention as significant as the MSC is ostensibly attractive as it could be held in reserve for emergencies, for example if we see a dramatic rise in switching and hence unsustainable positions for the losing suppliers.

However, the market stabilisation problem exists *now*, and we are less than 3 months away from a dramatic rise in the cap. An MSC of uncertain existence undermines its own purpose of stabilising the market and enabling hedges (and therefore the national aggregate hedge).

Furthermore, with closed hedges not being in the MSC calculation, downward bias of the MSC should be avoided. This indicates there being no loss trigger.

3.9 [Summary pros and cons of the MSC](#)

	Pros	Cons
Effect on market stability/solvency	A solution is imperative and this may be a least worst solution. The effect on stability could be soon and significant.	There is no precedent for this intervention type against the grain of competition. Unintended consequences are largely unknown.
Effect on Supplier of Last Resort	In the absence of ex post levy claim true ups that last several years, the SOLR has a degree of protection from the proposal	The MSC with administrative hedge determination is less accurate than levy true up from

	and so less pressure on suppliers to challenge the SOLR direction. Ex post levy true up and SVT exit fee make the policy more effective.	actual hedge. If (as expected) the determination is administrative, it effectively imposes a hedge strategy on the supplier that might leave excessive residual risk if the hedge is inaccurate.
Effect on customer of exited supplier and then the SOLR	None where the supplier is directed rather than volunteered, since we must assume that the customer will be assigned a supplier and the deemed rate will be capped. Volunteer suppliers may well appear with SOLR tariff offer below the cap, given the MSC, SVT exit fee and ex post levy true up.	As things stand, these customers are cross subsidised by other consumers. The cross subsidies are reduced by the interventions
Effect of Ofgem's ability to direct a SOLR and hence avoid Special Admin for the exiting supplier	The MSC potentially narrows the gap between an unwilling supplier and Ofgem needing to direct.	It is still harder for Ofgem to direct with an MSC than it is with an ex post levy true up and SVT exit fee
Effect on consumers other than those moving to the SOLR	The MSC moves some of the cost socialised in the levy to the customer of the SOLR. The market is stabilised and is probably more fair.	None, if this does not displace other remediating policies
Effect on the ability to divest the customers of supplier/s under Special Administration	Since Special Admin does not permit levy claim from suppliers gaining from the supplier under Special Admin, the MSC protection to the <i>gaining</i> supplier creates a route for liquidity for a variety of cohort switches (deemed, opt-in, opt-out etc.). This may be needed as Ofgem may not direct suppliers to gain on deemed (and hence capped) rates whilst the exiting supplier has a supply licence in Special Admin.	There may be better routes, enabled by primary legislation, to wind down the supplier/s under Special Admin. The MSC applied to the Special Admin supplier may preclude wind down solutions, but this effect could be avoided by not applying MSC to the Special Admin supplier (albeit this supplier might mount legal challenge).
Effect on customers currently on (capped) SVT	The switch cost chilling of competition creates near certainty of Ofgem recommending cap continuation into 2023. Whether or not the cap continuation is beneficial, the decrease in <i>uncertainty</i> is beneficial. The MSC <i>potentially</i> creates liquidity, relative to other measures, since switching is enabled without destabilising the market.	The MSC in theory significantly chills competition (but possibly less than other measures)
Effect on growing suppliers	To avoid a severe liquidity/solvency crisis, policies are likely to be enacted, over and above enhanced vigilance on supplier solvency. The MSC may be better than other potential policies such as the blocking of switches	Small/niche supplier growth is impeded.
Effect on suppliers supplying at SVT	In aggregate, suppliers are underhedged and underwater on wholesale costs relative to the cap. As prices fall they have stranded hedge risk. The MSC enables cap hedging, which benefits the UK overall.	The ability of suppliers to gain customers is somewhat reduced

Effect on defaults and mutualisation	The MSC and the associated reference hedge provides guardrails that should reduce moral hazard and default. The MSC entails strong incentive to reduce moral hazards.	An administratively determined reference hedge for the MSC could be inaccurate and thereby cause risks that end up with default
Effect on vulnerable consumers	The two tier market was commonly viewed as regressive. The potential two tier market without the MSC would be more so, so the policy is progressive. Less churn enables more effective targeting of vulnerable consumers for bespoke state funded support.	The subset of vulnerable consumers who are sophisticated switchers lose the opportunity for large savings
Possible carry forward of part of A's MSC from gaining supplier B to next gaining supplier C	This reduces the risk of B to gaining on SVT and immediately losing the customer and hence losing MSC.	It is cumbersome and it adds a dimension to the MSC cost table. The gaining supplier can stipulate an <i>FTC</i> duration and early exit fee with no new rules, and so no nascent SVT market may be an acceptable outcome

Overall, the number of “moving parts” that interact with each other in the open hedge element is large. For example, consider the effect of cap end date. If the cap were certain to end at end 2023 would have one theoretical hedge profile. If otherwise it were certain to continue unchanged into 2024, it would have a different hedge profile.

Other moving parts are, for example, i) change in cap indexation formula, ii) change in cap level (e.g. recognition of unrecognised or under-represented costs), iii) changes in ex post levy claim true up, iv) normalisation of what supply cost and other cost factors may and may not be awarded in the levy claim, v) structural changes in the wholesale markets (e.g. change in seasonal profile due to pipeline, storage, and Liquefied Natural Gas dynamics), vi) closely related policies such as allowed exit fees in evergreen tariffs, levy claims, vii) other related policies, especially in relation to reducing the risks of default, and normalisation of what may and may not be mutualised, viii) state intervention in bills (VAT, direct fiscal support, indirect fiscal support, adjustment of suppliers’ social and environmental obligations, etc.), ix) prospective ban on closed tariffs.

When the consultation is concluded, if the licence condition is laid, then it seems likely that it will need a number of clauses relating to the moving parts above. It is essential that policies are implemented as a coordinated package – for example MSC, SVT exit fee and levy claim changes.

3.10 [Legal matters to resolve](#)

Legal issues would need to be resolved. These are principally; i) the ability to charge an MSC to the *gaining*²⁰ supplier (not the customer directly) on a deemed tariff, ii) the ability to charge an exit fee on a non-deemed variable tariff (with the effective legal status of a default tariff), iii) normalisation of Supplier of Last Resort and Special Administration arrangements.

²⁰ In the consultation, Ofgem indicates that an exit fee can apply to SVT and default tariffs but not to deemed tariffs. Hence new legislation would be required to apply exit fee to deemed tariffs. Charge of MSC for deemed customer switching is not in keeping with the spirit of the primary legislation (since it applies to the gaining and not losing supplier) but might not be against the letter (since the effect is the same as an exit fee from the losing supplier)

Whether primary or secondary legislation is required to resolve these, or whether intra vires licence conditions are sufficient, is a matter for the regulator to clarify.

4 Other solutions

4.1 Exit fees for Standard Variable Tariff customers

This is an additional policy mooted. The action is the same as the MSC, i.e. a payment by the gaining supplier to the losing supplier. The difference is how the charge is set.

Speed of execution – The exit fee policy can be enacted very quickly if the need for primary legislation is avoided²¹. The question then is what is the need for haste. Haste is needed when the market is sufficiently backwardated and has fallen enough²² for hedge stranding to become a live issue. This is not currently the case but will become more so as weeks go by. A more pressing problem is Supplier of Last Resort, but for small supplier exits this can be addressed with levy claims. The main haste is Special Administration, but the MSC or SVT do not help this. Hence overall there is *no* need for *excessive* haste that would favour SVT exit fee over MSC.

Accuracy – By far the most accurate measurement of hedge stranding cost is by the supplier. This strongly favours SVT exit fee over MSC. However, the incentive of the supplier to err on the side of caution of all risk factors, with the effect of chilling competition with a high exit fee, is high. Ex post policing of exit fee is very possible but is very difficult, because even with the fact of the evolution of hedge stranding costs, to maintain simplicity for consumers, the supplier must set an exit fee profile ex ante, that will certainly drift away from the actual stranding cost. The enforcement would then become based on hedge *theory*. The protraction of this would create risk for supplier (to adverse flawed regulatory judgement), regulator (to allegation against supplier that is suspected but cannot be proved) and then consumer (as live enforcement would cast uncertainty into the market and chill competition).

Transparency – A complicated raft of SVT exit fees would make overtures by gaining suppliers very difficult. Price Comparison Website quotations would be omitting a key term. The necessary subsequently elucidation of this term add very considerably to friction in switching.

Operation of both policies – The MSC and the SVT exit fee could act together. In this case the regulator would set at MSC according to some formulaic approach and the supplier could set an additional charge, where the MSC is deficient. So the supplier receives one amount from the customer and an additional amount from the gaining supplier. This works well in *theory* because the regulator can set a crude lower bound MSC and the supplier apply a top up SVT exit fee for the circumstances where the MSC is clearly inadequate. The SVT exit fee is much easier to police when it is an adjustment rather than the full amount. In practice the operation of both policies together would be likely to be very complicated if SVT exit fees were routine rather than exceptional.

In the simplest economic terms, an exit fee to a departing customer is the same as an entry fee to an arriving customer, and an MSC from losing supplier to gaining supplier is the same as an exit fee, as it would be passed on to the customer. In practice they can be very different. For example if a customer must pay a switching fee, then; i) dissatisfaction would be greater for exit fee than MSC and would most likely be directed to the supplier charging the fee,

²¹ For example the rules on deemed tariffs

²² These tend not to go together. Spot market fall tends to reduce backwardation, and the economics of the current situation in gas indicate that this is likely to be the case.

whether it is the gaining or losing supplier, ii) an exit fee is much harder to collect than an entry fee, iii) an entry fee would act as a stronger deterrent to switching, iv) the variation of an exit fee can be broadly cost reflective to the losing supplier's stranded hedge cost, that is unknown to the gaining supplier.

It is easy to imagine a highly fraught media debate arising from a complex pairing of MSC and exit fee. It is generally the case that hedging is not well explained to lay audiences such as consumers and is therefore not well understood by them. There is a strong selection bias in the vocalicity of stakeholders following market movements. Those who made statements which were borne out by events tend to be vocal and those whose statements were not borne out by events tend to be silent. Hence suppliers, and indeed governments, will almost always be on the wrong side of public debate about prices and hedging. The practical outcome of this is that consumers are led to expect to be supplied at the lower of prevailing market cost and historic market cost.

4.1.1 [Sunset date for SVT exit fee](#)

If the licence condition had a sunset date, then either we would expect the exit fee to lapse for switch losses after that date or no new exit fees can be place in terms and conditions but the existing exit fees would run off to their termination dates.

If that sunset date is far enough into the future for there to be no hedge on that horizon date, then the situation is fairly straightforward. We would expect regulatory supervision to ensure that the exit fee eventually falls to zero after the end of the cap (whenever that may be !).

If the date were near, for example September 2022, then with no exit fee runoff there would be a "cliff edge" date on which the losing supplier has hedge protection for losses the day before the sunset and no hedge protection the day after. We would expect then a burst of gain activity on the day after sunset. The current suppliers then have a *current* exposure to losses *after* the sunset date. This would be expected to drive down the hedges beyond the sunset date. As time passes, the overall UK hedge then falls and indeed may have a cliff edge at the sunset date. The hedging ahead of gains is somewhat indeterminate. The *standard* SVT hedge, recognised by Ofgem as a reference hedge, *does* include gains, but the circumstances here are very different because here the gain tariff and the loss tariff are very different. As a general rule, FTC gains are *not* hedged ahead of gain. Hence the UK hedge position is shortened by the sunset of the licence condition. Given that the short UK hedge position has become a national problem, this effect naturally drives the optimum sunset date out until 2023 at least.

4.1.2 [Guidance and Enforcement](#)

Unlike the MSC, an enforcement regime for SVT exit would need to be designed carefully, and guidance published.

The enforcement environment is somewhat unclear. The precedent, in relation to undue discrimination²³, is that licence condition rather than Competition Act, *can* be used. However, since undue discrimination was more weighted to *pricing*, as distinct to *switching*, the Competition Act would be the more natural vehicle for SVT exit fee enforcement.

²³ SLC25A, now lapsed following the CMA Energy Market Investigation. SLC27.2A, relating to payment types, and originating in EU legislation, remains and was/is subject to two stage enforcement

Ex post enforcement under the Competition Act would be challenging as; i) the burden of proof is higher than for licence breaches, ii) the regulatory process for competition cases is much more amenable to defence than for alleged licence breaches, iii) cases would be defended more robustly, iv) as a result, cases take years not months, v) exit fees reflect prevailing market conditions, which cannot be accurately recorded for the final statement of case some years later. Overall, the Competition Act seems to be a backstop for the most flagrant violations.

Two stage enforcement, as was put in place for the undue discrimination licence conditions, would be much more effective. In two stage enforcement, an enquiry is raised by the regulator and the supplier may either change its pricing with no further action, or defend the pricing and face an enforcement case on licence breach that may develop to Competition Act enforcement.

Regarding publication of guidance, since the purpose of the policy is clear – to maintain market stability by defending hedges – then it is fairly easy to lay down the regulatory principles in guidance laid down.

4.2 Lighter touch version of the policy

In the same way that a very high cap is essentially the same as no cap, then a very low Market Stabilisation Charge or a very low or very limited duration SVT exit fee are essentially the same as no MSC and no SVT exit fee.

The consultation architecture, and associated legal architecture would require much work. Also the implementation architecture is cumbersome. Hence an “almost policy” with substantial architecture is probably not worth having. The question is whether a policy can set some guard rails that enable the market to stabilise, without adding to the already large administrative burden on regulator, suppliers and stakeholders.

4.3 Ex post levy claim true up

Of principal interest here is that the levy claim is in practice an ex ante claim of amount that is fixed and confirmed or altered after public consultation. It is questionable whether wholesale costs should ever have been taken into account in SOLR claims before the cap, because these should be incorporated into the SOLR tender tariff and the claim is a cross subsidy. However, in the presence of the cap, with SOLR tariff clearly caught by the cap, it is completely clear that a levy claim for wholesale costs may be made and must be paid. The trouble is now that with the cap potentially below the wholesale market for some years, that an ex ante levy claim is very difficult to formulate. Noting recent wholesale volatility, a reasonable worst case (e.g. 95% probability of not being worse than) would cause a very high levy claim and a [95%] probability of windfall to the supplier.

Both MSC and SOLR SVT exit fee very substantially reduce the ex-ante claim because they reduce/avoid the stranded hedge risk. But they do not eliminate the risk to the extent required in law (if the SOLR is directed against their will), since the future cap existence and level are unknown.

There is then a clear indication that the levy claim has two elements - an ex ante claim, and an *ex post true up* to reflect the risks that market circumstances cause the ex-ante claim to drift away from the true cost.

Noting the extent to which levy claims have changed in structure over the last 22 years, the splitting into ex ante and ex post true up seems to fall inside the regulator's vires.

How much to bias the ex-ante claim is a matter of judgement. Broadly speaking the regulatory architecture is not well designed for the supplier to pay back to the distribution companies. For example they may be unwilling to pay the interest rate implied. Furthermore the contingent liability creates both a financial headache for the supplier and a credit risk to the regulator. On the other hand, under weighting the ex-ante claim creates an administrative headache in managing a series of ex post true ups, and may cause the supplier cash flow²⁴ problems.

An expedient approach may be; i) leave the current ex ante claim process untouched, ii) have an upward only ex post claim true up.

4.4 [Summary of how three of the policies work together](#)

	MSC	SVT exit fee	Levy true up	Normal supply	SOLR situation	Special Admin situation
1	To Sep 2022	-	-	Partially stabilises market Any chilling effect is only temporary	Helps only slightly	Hinders, so should be excluded
2	-	To Sep 2022	-	Significantly stabilises market Has enforcement challenges	Helps significantly	Hinders, so should be excluded
3	-	-	Ongoing	-	Fully enables but is unfair	Enables, but legislation needed
4	To Sep 2022	-	Ongoing	As 1	Enables and is fair	As 1
5	-	To Sep 2022	Ongoing	As 2	Enables and is fairest	As 2
6	To Sep 2022	To Sep 2022	-	Significantly stabilises market Lesser enforcement challenges Is complicated	As 2	As 1 and 2
7	To Sep 2022	To Sep 2022	Ongoing	As 6	Most enabling and most fair	MSC and SVT should be excluded, then as 3

Given that desperate times need desperate measures, the market stabilisation case for having MSC and/or SVT exit fee seems compelling. The case for levy claim true up is compelling, but at the same time the levy claim should be minimised. This can be achieved by having MSC as the core policy, with the regulatory framework to enable SVT exit fee by exception, for example for the SOLR.

Therefore, the coordination application of all three policies is indicated, with SVT exit fee tightly regulated and ideally used only by exception. Exclusion of suppliers in Special Administration is indicated.

²⁴ SOLR cash flow is addressed in a separate consultation

5 Exemptions in relation to gains from suppliers in Special Administration

There seems to be a strong case for not allowing the supplier/s in Special Admin to be able to place any impediment, such as SVT exit fee or MSC, on switching away. This can be a Standard Licence Condition clause or a (very short) Special Licence Condition applying to certain suppliers only.

Whilst exclusion of Special Admin does not save money initially, since the MSC saved by gaining suppliers is lost by all consumers in the socialisation of the default/s, the presence of MSC or SVT exit fee for the Special Admin supplier would prevent orderly wind down and prolong the Special Admin situation. There would also be significant moral hazard with the Special Admin supplier having upside but not downside, with the hazard underwritten by consumers.

6 Supplier of Last Resort considerations

For Suppliers of Last Resort, the ex-ante levy claim, MSC and SVT exit fee act in the same direction from the supplier's perspective. However, to contend with the risks that the SOLR faces, the ex-ante levy claim would need to be set high. Having an ex post true up reduces the ex-ante claim. This benefits consumers directly and reduces the required level of MSC (or SVT exit fee). The MSC reduces the socialisation of costs and thereby improves fairness (as the SOLR customers in general benefitted from cheaper but unsustainable tariffs).

6.1 Switching from the SOLR

As things stand, the market has spiralled to a highly unstable position. The UK overall is inadequately hedged, with result of further instability. With the April 2022 cap far below the competitive level for that period, we may expect further exits, especially in the absence of MSC.

Here the policy becomes highly relevant. The SOLR tariff is a deemed tariff and hence caught by the cap. This situation was not examined in detail when drafting the cap legislation.

As things stand, the only way that the regulator can force a supplier to be SOLR is to award a levy claim to compensate for the difference between the cap and the hedge cost. However we have the challenge that the hedge duration is long and hence this must be estimated ex ante and awarded, and/or trued up ex post. True up ex post is clearly in the spirit of the SOLR policy but there is significant moral hazard either that the regulator will not award actual hedge costs or that the supplier will claim hedge costs in excess of actual costs but which cannot readily be disproven.

There seems to be a case for having an MSC *and* an SVT exit fee for the SOLR, with the SVT exit fee contending with inaccuracy of the "general purpose" market wide MSC, for the specific SOLR situation when a supplier is directed rather than volunteered to be SOLR. It is not easy to apply exit fee since the tariff is deemed. There are workarounds such as a high SOLR deemed rate with opt in right to convert to a lower set tariff.

Without the SVT exit fee, the SOLR direction becomes complicated. If the hedge cost for the MSC is under-done, then the SOLR would immediately protest, and appeal/refuse if required. Such appeal places significant risk to the regulator, not least because SOLR events are urgent. In addition to this, the situation in which the supplier accepted the Direction but only on the basis of a levy claim not accepted by the regulator, the legal pathway, following successful appeal, to uplift the levy claim to correct the MSC amount is not entirely clear if no ex post true up has been implemented.

If the customer of the exited supplier is locked in to the SOLR (e.g. by MSC, if the legality can be confirmed) then the need for an ex post levy true up is diminished to such an extent that the ex-ante levy can absorb much but not all of the risk. The ex-ante levy claim (for an infinite duration cap of unchanged structure) can be closely approximated by the difference between the cap trajectory and the associated hedge in the forward market. It *does* seem that MSC, SVT exit fee, ex ante levy claim and ex post levy claim true up can act together effectively. Note that MSC and exit fee are fairer than levy claim. Although the SOLR

customer is more locked in, they generally enjoyed low and unsustainable tariffs and many have had their account balances underwritten by other consumers.

This then has a significant effect on closing the gap between a regulator attempting to direct a supplier to being SOLR and the supplier refusing on well supported legal grounds (and the directors' duties). It also begins to reconstruct the overall UK hedge position.

With the gap much smaller, the regulator has greater force and the supplier has less objection to being directed to be SOLR.

Hence the proposal *is* a potential solution to the impasse.

Furthermore, the SOLR gained customers have a well approximated residual hedge liquidation cost if the MSC were open hedge only. Since the regulator must construct a daily table of gain award from gaining supplier to losing SOLR, then there is merit in publishing this every day. If the gaining supplier from the SOLR knows that the consumer was an SOLR gain then they know the gain award requirement.

6.2 Possible SOLR lock in for 6 months

The supplier must hold the price for six months but may make a levy claim (which must be awarded). The customer can leave at any time without penalty.

In the absence of MSC and SVT exit fee, an alternative is simply to have a regulatory lock in to consumers with the SOLR for 6 months. Since the SOLR tariffs are deemed then some legislation would be required²⁵ to do this.

The lock in has a very substantial reduction in risk, and therefore cost of risk, to the SOLR. Since risk incurs a deadweight cost, this is net beneficial for total welfare.

The policy benefits and disbenefits of SOLR lock in are not rehearsed here. Considerations would be, for example, that the customer has enjoyed a tariff below sustainable levels, they may have been insured by other consumers for their defaulted credit balance, they are generally more advantaged than consumers not with the exited supplier.

A key benefit of the MSC and SOLR SVT exit fee, is to avoid an SOLR lock in.

6.3 The position of the SOLR after 6 months

Here we face a substantial challenge. As things stand, once the supplier has taken on the customer on deemed terms, they must continue to supply on request and they are caught by the cap. A cap below cost places the SOLR with negative financial accruals for an indefinite period

On the one hand, Ofgem is not in a position to force a supplier to be SOLR without recognising and awarding a levy claim for hedge costs going beyond the 6 months.

On the other hand, Ofgem *must* be in a position to force a supplier to be SOLR, or otherwise enter Special Administration for small suppliers. Special Admin was clearly not designed for this purpose.

²⁵ There are workarounds without new legislation, such as ban from *gaining* from SOLR within 6 months, on from gaining without paying a gain fee, but these circumventions would not be ideal

An MSC with short duration might give the SOLR inadequate protection. One solution is ex post levy claim true up, but this could last years and long tenor hedges are subject to considerable discrepancy between different theoretical arguments. An alternative is an SOLR specific SVT exit fee that can last as long into the future as is required. This would need to be transparent at the time of appointment, as consumer disquiet would be inevitable.

How high, how long, and with what mid-term exit penalty the supplier can pitch with the SOLR offer is a matter of judgement. Without legal and regulatory clearance, the supplier may not impose an exit fee because the SOLR tariff is deemed. Yet without adequate protection, enabling the supplier to finance their licensed activities and maintain service for other customers, the supplier may refuse the direction. Company directors have responsibilities under the Companies Act as well as wider requirements such as the 1986 Insolvency Act. In practice this means that they not only *can* but *must* ensure that the company is protected.

Since all suppliers enter the mandated SOLR tender on the same basis (all with no SOLR hedge, all facing the same forward market), it seems to make sense for the regulator to publish an SOLR SVT exit fee schedule along with any MSC schedule. In this way, there is the opportunity to mount the various arguments that may pitch the fee high or low, and land on a narrow enough range to enable an SOLR direction.

As with the period within the 6 months, the MSC, exit fee, and levy claim true up can act together. A key difference is that after the 6 months, the supplier is entitled to raise the tariff, at least up to the cap if it still exists.

6.4 Distinguishing between SOLR and non SOLR consumers

Non SOLR customers would have an MSC that is probably administratively determined. SOLR customers could have the same MSC but an additional SVT exit fee if the legal issues for deemed contracts can be resolved or a workaround found. The alternative is a bespoke SOLR MSC. Noting that SOLR events are episodic rather than continuous, and that Ofgem can publish an SOLR specific exit fee schedule, it is not excessively cumbersome to operate the MSC and the exit fee in tandem.

7 Effects on the switch market

7.1 The effect of the MSC on the level and duration of competitive FTC tariffs

Generally speaking, the customer will leave the cap if the wholesale price has fallen and cheaper FTCs appear.

The FTC gaining supplier has four considerations; i) the MSC gain cost, ii) the margin in the offer period/s, iii) risk of losing the customer, iv) the risk of rolling to a low cap.

The gaining supplier must raise the FTC gain price above the competitive level by an amount that covers the cost of the MSC. This then creates exposure for the gaining supplier, since, being above the competitive price, they can lose the customer immediately and end up just losing the MSC. An obvious solution is to set an FTC early exit fee at the MSC cost, reducing over the FTC period. Note that the supplier still loses if they lose the customer and the market has fallen further, since they will have a stranded hedge cost not covered by an exit fee that is market independent (as they invariably are). They could reduce this risk by adding a *further* amount or a sliding scale to the FTC early exit fee.

We can see from this that the effect of the MSC is for the *actual* FTC price to fall slower than the competitive rate unencumbered by the MSC. This is commonly called the “feather²⁶” effect.

Since the MSC cost is high, then this forces the gaining supplier to offer only a long term FTC. Especially since to avoid seasonality of the FTC offer, that FTCs tend to be in integral numbers of years, then the contracts could be at least two and as much as five years. This would cause huge problems later because if the market for any given wholesale contract falls, then consumers would be locked in way above market, and florid commentator language that is adverse to suppliers would be certain to arise. The supplier would be highly exposed to regulatory intervention. Furthermore, such would be the range of tariffs designed to navigate this landscape, that they would be confusing and this in itself causes all sorts of consumer and regulatory problems.

The rules for Fixed Term Contracts (SLC22C) are rather complicated, as they need to be. Broadly speaking the rules are oriented to disallow unilateral changes other than index following during the fixed term, and rolling automatically to the supplier’s cheapest variable default tariff with no exit penalty. With the market structure as it is now, we can expect considerable innovation within the rules. For example the FTC does not have to be at a flat price and could have structure within the term, provided that it is all very clearly laid out.

The regulatory ideal is the soonest return of one year FTCs. However, one year is a relatively short time to recover a large MSC over and the risk of rolling to a low cap is high. A high exit fee would be needed for the duration needed to recover the MSC. If this is short, then customer lock in for only one year is not a big problem. If the duration is two or more years (thereby enabling a lower price), lock in is more problematic.

²⁶ See NERA https://www.nera.com/content/dam/nera/publications/archive2/PUB_NERA_EnergyUK_0511.pdf
Notwithstanding this study, accusation of “rocket and feather” pricing remains common

7.2 The effect of MSC on SVT gain tariffs

If the MSC is set only at the open hedge of the losing supplier A, then if the gaining supplier B immediately loses to supplier C, then B pays an MSC but does not receive one. This problem does not exist if the MSC is set at the difference between cap and wholesale market, as then B receives from C almost the amount paid to A.

The problem can be partly solved for an open hedge only MSC by having an SVT exit fee. However, the trouble is that a long period of lock-in is needed to recoup MSC and it is not ideal to have customer lock in whether the supplier has discretion on price change.

8 Appendix 1 – Tariffs, hedging and the cap

8.1 Tariff types

To understand the effects of the cap on contracts and hedging we first need to establish the core contract types.

There are five main contractual tariff types;

- i) Variable tariffs – in practice Standard Variable Tariffs (SVT) in which the supplier has the unilateral right to raise the tariff and the customer has the unilateral right to leave without penalty. They are “evergreen” with no contract end date.
- ii) Fixed Term Contracts (FTCs) that have a fixed term and usually a fixed price. After the contract end date, the customer either contracts a new FTC, leaves the supplier or “rolls” to a backstop default tariff (in practice usually SVT). FTC innovations are likely, for example an end of contract fee, that is waived on rollover to another FTC.
- iii) Indexed, which can be evergreen (in practice with no exit penalty) or fixed term (with a potential exit penalty). The cap is an indexed contract that has indeterminate term because the end date is in practice unknown.
- iv) “Out of Contract” *deemed* tariffs. These apply if no terms have ever been bilaterally agreed with the customer. In practice these are generally set at SVT. They have formal status in law – for example they may not have exit penalties and there are restrictions on the tariff rates.
- v) “Out of Contract” *default* tariffs. These apply after the end of a contract, if the customer has not agreed another contract or left. The formal status of default tariffs depends on the initial contract. There is no formal regulation but they are bound by consumer law and the standards of conduct licence condition SLC0. There was significant relevant regulatory experience of default tariffs and auto-rollover in the microbusiness sector in the early 2010’s.

For completeness we note here some other tariff types. For brevity there are not considered further here.

- i) Collective Switching – CS tariffs are (usually) FTC tariffs entered into by a CS process which is executed by the regulator or other third party. The essential difference between CS and FTC is that the consumer plays a more passive role and some of the normal regulatory requirements are not applied (suitability tests at the level of the individual, degrees of “opting”, data protection, etc.). They incur market risk exposure to suppliers, that differs to FTC risks.
- ii) Dead tariffs – Dead tariffs are tariffs that consumers are on but are no longer available.
- iii) Closed tariffs – tariffs only available to certain consumers, for example only new customers
- iv) Dark green tariffs – Fully green tariffs entail the purchase by the supplier, and allocation to the tariff, of the same volume of Renewable Electricity Guarantee of Origin (REGOs) as is supplied. Certain tariffs are treated by the regulator as darker green, for example if the supplier has participated in the financing of the generation. The darker green tariffs are not subject to the cap.
- v) Intermediated – For example by flipping arrangements. The flipping agent observes the market available to it and switches the customer according to pre-

agreed criteria. The consumer plays a passive role once the flipping agreement is made.

The Tariff Cap Act applies to “all standard variable and default rates”. Both terms are defined (s1.4(a) and (b)). “Standard variable” applies to any (agreed) contract with no defined end date”. “Default” arguably includes deemed rates and this paper assumes that it does.

8.2 The price cap

Following the Statement of Dissent²⁷ of a panel member (now Ofgem chair), after the Competition and Markets Authority 2014-2016 Energy Market Investigation, Parliament in 2018 voted in a price cap²⁸ for all domestic consumers supplied under default/evergreen tariffs (with no contract end date) under what is generally termed the Tariff Cap Act. The backstop end of the cap is the end of 2023, albeit that government has expressed a desire²⁹ to set new legislation to continue it.

For each of the years 2019-2022, Ofgem makes a recommendation to the Secretary of State as to whether competitive market conditions suggest that the cap is continued into the next year. In practice this recommendation is made in late Summer a few months ahead of the next year³⁰, i.e. when observation period hedging is beginning.

Ofgem sets both the method and level of the cap, subject to a minimum reset frequency of six monthly. Of considerable debate has been the extent of Ofgem’s legal requirement to “have regard³¹” to the effect of the level of the cap on the ability of suppliers to finance their regulated activities.

The uncertainty in cap end date, structure and level create significant problems in hedging and maintain the moral hazard which therefore requires active regulatory vigilance.

8.3 Modelling factors and simplifications

To focus on the core arguments, extreme simplifications in modelling are made here. In order to execute the proposed policy, the modelling simplifications would need to be addressed.

8.3.1 Modelling simplification for perfect competition

“Perfect competition” in produced goods is an elusive concept. Whilst there are some useful concepts, such as Cournot and Nash, there is no theory that has successfully resolved the necessity of an element of market friction in order to recover fixed costs.

²⁷ See P1415 <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf>

²⁸ <https://www.legislation.gov.uk/ukpga/2018/21/contents>

²⁹ <https://www.gov.uk/government/news/millions-of-families-to-benefit-as-government-acts-to-drive-down-energy-bills>

³⁰ For the 2021 recommendation for 2022 see

file:///C:/Users/drcph/Downloads/CfEC_review_2021_publication_final.pdf

³¹ In other sectors, there is substantial case law on this term. In brief, the weight to which the regulator must apply the criterion it must have regard to is highly specific to context

It remains common to use Bertrand competition (and its close cousin of differentiated Bertrand competition) as a benchmark of sorts. In Bertrand competition, prices are equal to variable costs at the margin and fixed costs are only recovered in highly specific situations³².

Bertrand competition has never sustained in any market for produced goods. This is because fixed costs are not recovered, and hence the situation is unstable.

With that caveat in mind, to simplify the modelling explanations, we follow convention in calling the retail tariff the competitive price when it equals the prevailing forward wholesale price.

If we ignore the cost uplifts, the competitive price for a one year Fixed Term Contract with substantial exit fee is then the same as the one year wholesale market contract effective immediately.

8.3.2 [Changes in demand](#)

For the core modelling we assume demand that is non periodic, deterministic and non-trending, i.e. flat.

Nevertheless this is such a critical assumption that seasonality in particular is called out as a cost and risk factor throughout the text.

8.3.3 [Periodicity](#)

The cap is constructed by simple time³³ weighting of daily observations of a contract for flat delivery over a period. However, the actual volume delivered to customers has daily, weekly and seasonal periodicity.

High demand volumes cause high wholesale prices and hence we observe high correlation between demand and price. The effect is that if (as it is) the indexation is time weighted rather than demand weighted then since the supplier must supply higher volume when prices are higher, the cap should be adjusted for the extra cost.

There are more complex seasonal risks, especially in gas. For example if the demand and price peak are unchanged in *shape* relative to usual but move in *date*, then the supplier who hedged seasonal demand must sell back at low prices gas that was expensive and buy gas that was cheap but is now at high prices. This risk is sometimes called “shoulder” risk or “swing” risk for power and gas respectively.

These effects are very important, but to maintain maximum simplicity, are ignored where possible in this paper.

8.3.4 [Costs other than wholesale costs](#)

To be able to focus on the hedging, these are all ignored, including costs of risk and capital. Essentially this means that they are set to zero.

³² One example is in which demand varies in a well characterized way and each producing unit lives on a single fixed/variable cost frontier. Only the highest cost unit offers above variable cost. This is closer to differentiated Bertrand rather than Bertrand competition.

³³ There is actually a UK precedent for volume weighting a cap. This was done for the annual wholesale price in the Pool. For brevity, this paper ignores the distinction between England+Wales, Scotland, and Northern Ireland

We can recognise the difference between actual and allowed non wholesale costs simply by adding an adjustment U to the cap. For a high cap $U > 0$. For a low cap $U < 0$.

8.3.5 Other modelling simplifications

Electricity – there are significant differences between gas and electricity risks, and gas has the additional complication of the role of the shipper. To avoid cumbersome doubling of the narrative, the descriptions are generic to gas and power. Since the default situation, that is contributing so substantially to this crisis, is closely associated with the non-payment of obligations from electricity supply, greatest attention is paid to electricity. Even though the issue is predominantly one of fossil fuel demand in global markets, it is closely associated with electricity in each country. The issues in supply and tariffs can generally be expressed in electricity terms.

Wholesale market liquidity – The more standard the contract the more liquid it is. The most liquid contracts are annual baseload (flat load). In this paper we generally assume a “complete” market with perfect liquidity in all contracts. The specific challenge that this raises is that suppliers do hedge “shape” and “detail” when they can but there is little or no market reference point for administrative determination of these hedges. The “basis” risk between the actual required hedge and the available market hedge is currently running very high.

Capital costs – As noted above, these are set to zero, even though they are costs that relate directly to wholesale market risk. This is a problematic assumption but it is simply too complex to include in the analysis here. Where this assumption is particularly problematic – in situations where the hedge is indeterminate, the finite cost of capital is invoked.

Gradual resolution of the uncertainty in cap structure and level. We assume that the cap level and structures go from highly uncertain to certain in a single day – the day on which they are formally decided. Hence that part of the cap hedge that precedes the observation period, becomes certain on that day. Even apart from the uncertain end date, this is a highly problematic assumption, but evaluating the likely cap structure scenarios is simply too complex to include in the analysis here.

8.4 The structure of the cap and its effects

The Ofgem cap has six smoothing parameters relative to a daily index. Expressed in terms of greater smoothing, these are; i) early start of observation period, ii) long observation period, iii) long cap delivery period, iv) late reference period, v) long reference period, vi) whole year reference period. The “6-2-12 semi-annual” can be expressed in the parameters above, in months as (6,2,0,12,6), where the coincidence of the start of the cap period and the reference period is noted by the third term zero that is implied and silent in the Ofgem naming convention.

The naming convention is then (observation length, observation gap, starting dislocation of reference contract to supply delivery period, length of reference contract, cap period).

Index contracts are not particularly easy to understand intuitively. One way of doing so is to begin by looking just at the cap period and the reference contract. The supplier is short the cap period since the energy must be bought for supply. The supplier is long the reference contract since increase in its value increases supplier revenue. So buying the cap period and selling the reference period, at the same total volume, is the hedge before observation

begins. By the end of the observation period we must have exactly the amount in the supply period that we need to supply, and no other contracts. Since we already bought the supply period, we simply unwind the reference contract hedge over the observation period. We do this for all cap periods and find that most of the initial hedges offset each other.

The “12” has two smoothing effects being; i) its length and ii) it being a whole number of years and hence eliminating seasonality of the cap level.

By way of example, the cap for the period 1st April 2022 to 30th September 2022 is based on the daily observation between 1st August 2020 to 31st January 2022 of the traded market price of the annual baseload contract for delivery between 1st April 2022 to 31st March 2023.

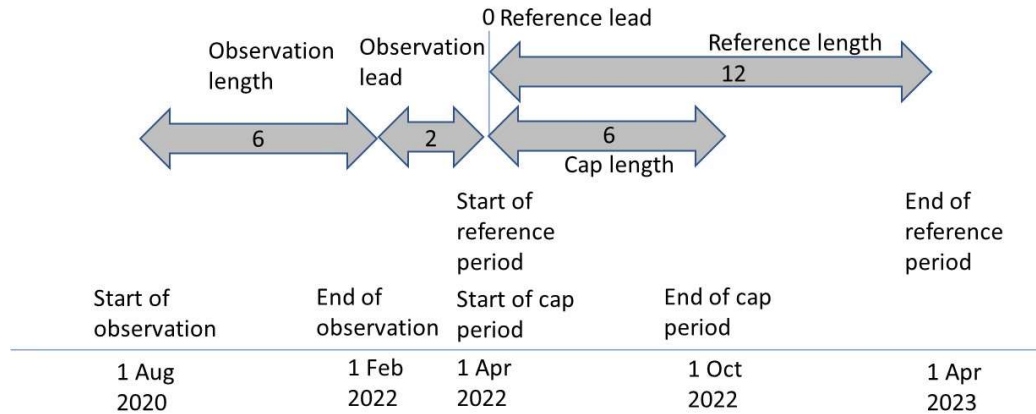


Figure 9 The cap parameters of “6-2-12-semiannual”. Equivalently (6,2,0,12,6) with the 0 denoting coincident start of the reference contract and the cap period.

By way of comparison, the most competitive structure is a daily index with coefficients, in days, (1,1,0,1,1) for day-ahead indexation D-1 and (1,0,0,1,1) for out-turn indexation D (the most accurate and competitive). If we express (6,2,0,12,6) in days we have (182,61,0,365,182) this brings to life the extent of smoothing and lagging.

8.4.1 The competition distorting effect of lags

First, we should note that “distortion” is not meant as a pejorative term. It is the arbitrage opportunity between the actual (market or administered) and (theoretical) live competitive rate. Many consumers find it convenient for prices to be smoothed, and indeed much current rhetoric of the cap cites the cap “protection” from market price changes, that is in reality a smoothing rather than reduction of the average price over time. The “distortion” is however an indicator of competitive conditions.

Consider the situation below. There is a daily cap that is set at the month ahead price with an observation period of one day. i.e. the cap for delivery on day T is set by the market price for delivery date T on observation date T-30 days. In the numbering convention of the cap, the cap is (1,30,0,1,1) in days.

Suppose that we need to consume every day and can do so at the cap or at the competitive market rate. To simplify, we assume that the customer can switch between cap and market rate every day.

So each day, they can buy (the competitive rate) at the day ahead price, or they can buy (at the cap) at the price that the same delivery day forward contracts was trading a month ago.

They buy at the lower bound of the envelope shown below, benefitting from market movements between cap setting day and delivery day.

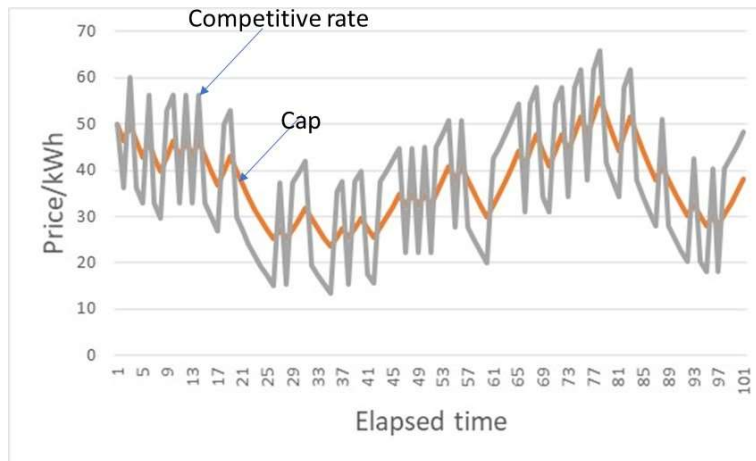


Figure 10 A daily cap with a 30 day observation lag. The customer can buy at today's spot price or the price for today's delivery 30 days ago

It is easy to see that the consumer has an *option* that has value that derives directly from the 30 day lag from wholesale price to cap price. It is equally easy to see that the supplier, who must provide energy every day, is "short" of the same option³⁴. From the consumer perspective, the option actually divides into two; i) the value visible at horizons less than the 30 days (called the "intrinsic value"), ii) the change in the market as delivery draws nearer than (called the "extrinsic value" or "time value").

The actual cost to the unhedged supplier is represented by the orange line and the revenue is represented by the lower envelope of the orange and grey lines. Clearly the consumer is buying energy below cost, purely as a result of the lag, even if the cap is set from market forward prices (Uplift $U=0$) rather than below market forward prices.

The key lag here is between the observation period and the delivery period. Suppose that the observation period were 1 day, the gap between observation and delivery 2 months and the delivery period one day. We can denote this, in days, as $(1,61,0,1,y)$, where y can have different values. Then the lag is 2 months (61 days). In the current cap structure, in months, $(6,2,0,12,6)$ the lag is 2 months (i.e. the period over which the market can develop whilst the cap stays still) plus the average of the 6 months observation (since the amount of uncertainty reduces over the 6 months), i.e. a total of approximately³⁵ 5 months.

8.4.2 The competition distorting effect of smoothing even without lags

We can see this below. Firstly consider the situation with zero wholesale price volatility and hence no lag effect. We can see that the sophisticated consumer, in the presence of sophisticated tariffs (for example with complex exit arrangements), will consume at the cap

³⁴ The upper bound value (called "ruthless" exercise by consumers) can be determined, albeit that the methods used (different for gas and power) are complex and subject to significant calibration challenges. For policy purposes, the value can be estimated by simply comparison of time series, using proxy values for the month ahead one day delivery price.

³⁵ Formally this should be duration weighted, since volatility increases as a contract approaches, but this is not important here

for one part of the cap period and at FTC for the rest. This leaves the supplier with a hedge for the period of supply under the cap, but with a hedge price above the cap.

Formally the figure (A) below shows an averaging rather than a smoothing effect, and figure (B) shows smoothing, with a more contrived forward curve.

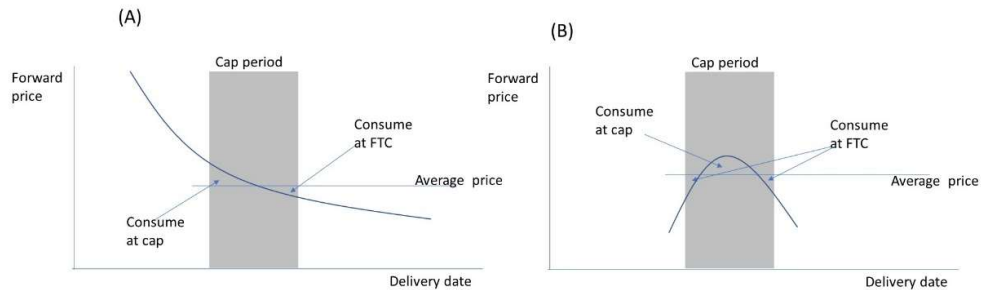


Figure 11 The effect of averaging (A) and smoothing (B)

The presence of volatility and the passage of time then adds a lag effect in addition.

8.4.3 The distorting effect of dislocation between cap period and reference period

Consider now a daily cap that is set at the month ahead price for that delivery day but with no lag. The designation, in days, is (1,0,30,1,1). More realistically the reference contract would be a whole month.

We can see below that on day 16 we will buy at the cap and on day 63 we buy in the market.

The forward contract is less volatile than the spot contract. This is exaggerated for emphasis in the figure below.



Figure 12 Cap price (in yellow) set at the 30 day ahead forward price. The consumer can buy for delivery today at today's spot price or today's price for delivery in 30 days time

The arbitrage value derives from three forms; i) periodicity, so we may buy in winter at a summer forward price, ii) prior volatility, that drives the forward curve to backwardation or contango, iii) structural effects, such as permanent force for contango as prices rise on average over time.

As before with the lag, the cost for the unhedged supplier is the spot market price and the cost to the consumer is the lower envelope of the two lines.

At the time of setting the cap, the expectation differential “intrinsic value” between the two prices is easy to read from the prevailing forward curve. The main value is actually the option “time value” from the tilting³⁶ of the forward curve. The option value can only be estimated in a highly simplified setting that does not correspond to actual (periodic, volatile, etc.) prices.

8.4.4 The effect of distortions

Distortions in competitive markets create the prospect for arbitrage. In this case this means that fleet of foot suppliers can offer sophisticated products to sophisticated consumers. If, which is the case, commodity production is unaffected, then this moves money from one place to another. One movement is from normal and disadvantaged consumers to sophisticated consumers, which is regressive. Another movement, relevant here, is the movement of money from incumbent suppliers, who have supplied below cost, to sophisticated consumers, who therefore receive energy below average cost. The consequences of this are felt by all consumers and hence this is regressive.

8.5 Hedging

Risk has a direct effect on cost of capital and hence suppliers attempt to reduce risks where they can. They are exposed to changes in wholesale market prices. Below we describe the basics of hedging, in just enough detail to consider the proposal. Both are simplified for ease of illustration. A specific simplification that takes care to unpick is that the standard SVT applies with no actual or threatened price intervention. In reality, price intervention has loomed since at least 2013 when suggested by Ed Miliband as a pre election commitment by the Labour Party.

A Fixed Term Contract with a significant exit penalty has a simple hedge. The supplier buys the supply volume for the duration of the FTC. This is shown below.

A Standard Variable Contract has hedge requirements that are somewhat more complex because the supplier has the option to raise prices unilaterally (a “call” option) and the customer has the option to leave without penalty (effectively a “put” option). Nevertheless in the situation with no price intervention, we can express the SVT hedge simply, as shown below.

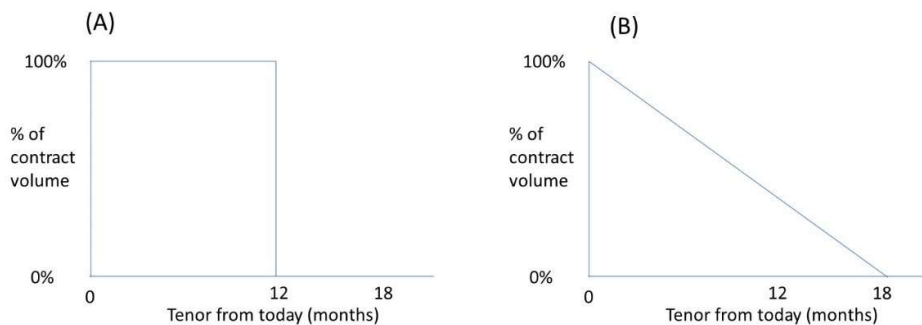


Figure 13 (A) one year FTC hedge. (B) SVT hedge

³⁶ There are two effects here. Firstly the tilting of the forward curve with periodicity removed. Secondly the change to periodicity with the de-periodic forward curve unchanged. Both can be modelled with principal components.

8.5.1 Hedging a very low cap – before the observation period - the basics

First, we consider a cap that is lower than any other tariff in the market. Since this is a non-equilibrium situation with all suppliers losing money, we will later consider that effect.

A low cap with no volume risk and a liquid granular market can be hedged perfectly. The sequential cap delivery periods have offsetting hedges. The net hedge on the day that the structure is laid out is shown below. The first period is ignored because it was short (and contentious) and the last period is ignored because it is near zero on the cap setting date.

To simplify the hedge we divide the index into two. Half of the index is 6-2-6-semiannual (6,2,0,6,6) and half of it is 6-2-6-semiannual with the forward contract pushed back 6 months (6,2,6,6,6)

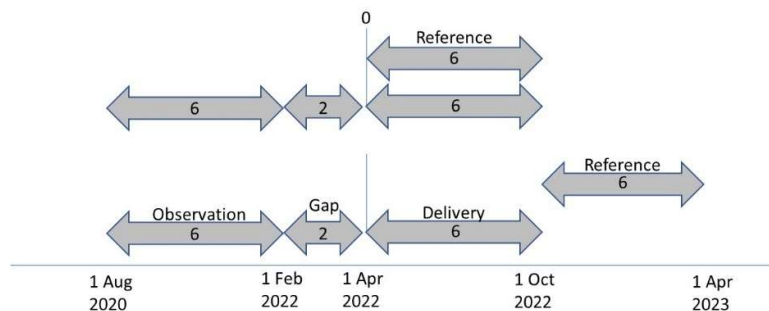


Figure 14 Splitting the cap index into two

We can see that for the first half of the index the cap coincides with the reference. If the reference contract increases in price the cost to buy energy rises and the cap rises, so there is a natural hedge. There is no need to hedge in advance of the cap period.

For the second half of the index the cap and the reference contract are misaligned. If the forward price for the cap period rises, then the delivery cost of the cap rises, so the risk position is “short”. If the reference contract price rises then the cap revenue increases, so the risk position is “long”.

We can apply the same logic to the next cap period and find that the long risk for the April cap offsets the short risk for the October cap, so the risks net off. This happens all the way along until we are left with the final long position for the 6 months after the cap ends.

Since we know the risk, we buy the hedge, i.e. 50% of the cap volume, in the cap delivery period. This is shown below.

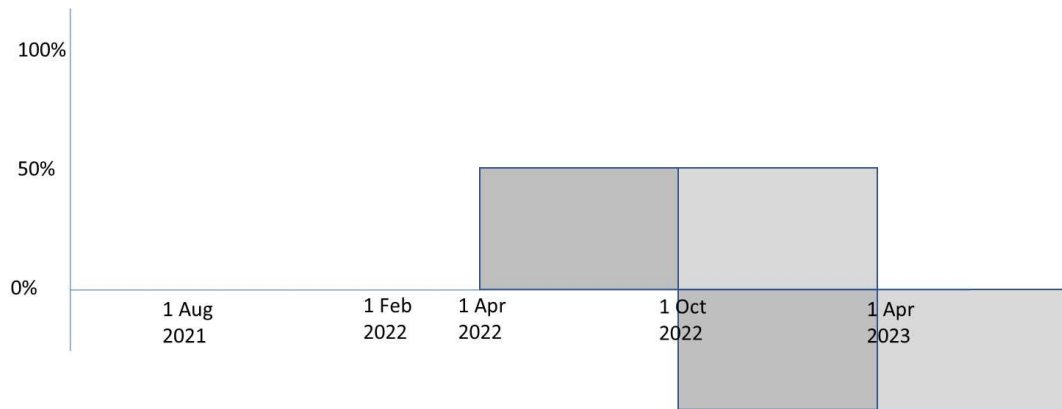


Figure 15 The hedge for the Apr 2022 and Oct 2022 caps, in dark and light grey respectively, before the beginning of the observation period

Note that since the supplier's short position (managed by the long hedge above for the 6 month forward contract out of Apr22) precedes the long position (managed in theory by a short hedge in the 6 month contract out of the cap end date), we can see that since near term contracts are more volatile than long term contracts, that the overall position is short. This is a result of the dislocation between reference contract and cap delivery. Under a different indexation scheme, the supplier's initial position could have been *long*³⁷. For this reason we may *not* assume that the supplier has a short position before the cap indexation method is set. It is therefore not generally appropriate to cap hedge before the cap index is set.

8.5.2 The hedge effect of the end date of the cap

If the cap is certain to last to a fixed date a long time in the future, and the structure be unchanged, and volume is constant, then the supplier has a "long position" at 50% of supply volume, 6 months beyond the end of the cap. In theory, then *selling* volume for that date eliminates the risk.

In practice the current risk of the long dated contract is low due to what is called the Term Structure of Volatility – long date contracts are less volatile than short term ones. They also have higher transaction costs and commonly have higher capital requirements. In the figure below we see this for a cap ending at the end of 2026. The 2027 forward contract is non-volatile³⁸ for a few years and then increases its volatility as delivery approaches.

³⁷ This situation is described in Harris (2005) "Electricity Markets" pp 93-99

³⁸ The process shown is a simple geometric Brownian Motion one factor mean reverting



Figure 16 Schematic - Increasing volatility of the 2027 delivery price (green) as time passes and the spot price develops (grey)

A second factor is possible changes to the cap structure. The current cap exposes suppliers to backwardation (long date forward price falling relative to near term forward price). If the regulator changes the indexation structure, then the risk could reverse to contango risk (the opposite of backwardation) which would make the hedge increase rather than decrease risk.

A third factor is the shortness of the final period if it ends at a year end. A change in indexation is required for the final quarter.

A fourth factor is that each year before autumn 2022, the regulator recommends to the Secretary of State whether market conditions are such that the cap should be removed. This is of course irrelevant to the current cap because the recommendation has been made and accepted for 2022, and the regulator is not required to make a recommendation for 2023. If the cap continues into 2023, then the risk would return. The challenge here is that in practice the regulator only makes a recommendation about 4 months before the next cap period is due to start and 4 months after hedging may have begun. This is a particularly pernicious risk. It has not in practice been a high risk in the period to date as it was almost beyond doubt that the regulator would recommend, and the Secretary of State would accept, continuation of the cap. However, change to the *structure* and *level* of the cap carries significant risk.

The fifth factor, similar to the fourth, is the uncertainty in primary legislation. Will there be a cap beyond 2023, what will be capped, will the structure be absolute or relative or indexed or whatever, if indexed what will the index be, will the cap be set high or low or ratcheting upwards.

A sixth factor is that there are substantial internal corporate barriers to hedging the long dates for the cap, given uncertainty of existence, level, structure, and end date. Furthermore, for a supply company to hedge *sell* energy requires *significant* extra governance since supply companies generally have a naturally short rather than long exposure to energy prices. Accounting for such a hedge is challenging and in practice would increase the cost of capital.

The volatility of long date contracts tends to be low and hence the pressure to hedge is low. For a certain cap end date, the pressure to hedge the final long position increases as the end approaches.

The end date has been a particularly pernicious risk because in law the extension of the cap into the next year is only decided in the late summer before. This actually affects the near term as well as the long term hedge. The October 2021 cap, that extended into 2022, needed to be half hedged in 2018 and the other half developed from Feb 2021, and yet the existence of the cap in 2022 was only determined in August 2021, long after hedging had begun.

All in all, the myriad uncertainties create substantial governance challenges in executing a long hedge *sale*, even this is correct in risk theory.

We will from now on in this paper ignore the long term hedge.

8.5.3 Hedging the cap in the observation period

The hedge development is shown below.

In (A) we have the hedge done at the time of cap structure setting. Note that the hedges for the second, third and fourth cap delivery periods net, leaving of the first cap period 50% long and the first period beyond the cap 50% short.

In (B) we buy the first cap period reference contract through the first cap period observation period. 1/182 of the volume is bought every day for the 6 months (~182 days). By the end of the observation period we are 100% long in the first cap period and ready to deliver this to the cap and 50% long in the second period.

In (C) we can ignore the first cap period as hedge has delivered into the supply. We buy the second cap period reference contract through the second cap period observation period. 1/182 of the volume is bought every day for the 6 months. By the end of the observation period we are 100% long in the second cap period and ready to deliver this to the cap and 50% long in the third period.

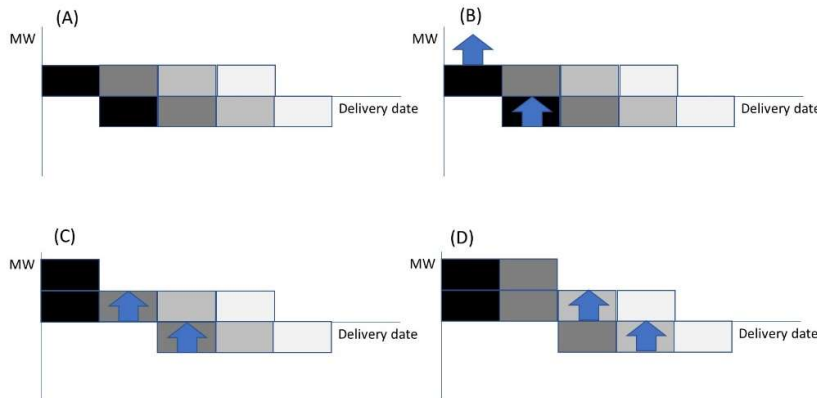


Figure 17 Hedging a four period cap See text.

Consider now the development of deliveries in the April 2022 cap period. We hedged 50% when the cap structure was set and then the rest of the 50% over the observation period. This is shown below.

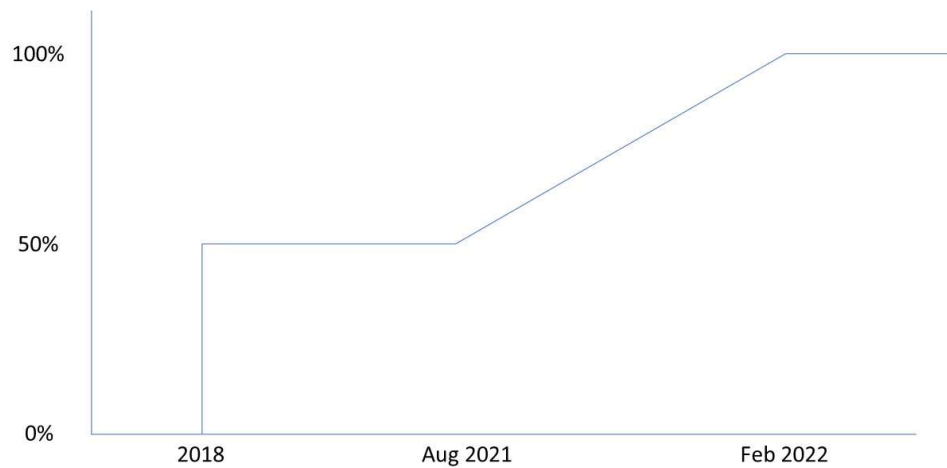


Figure 18 Development of the hedge for the Apr 2022 cap, during the observation period

So far so good. At any point in time we at least have an administrative view of the hedge position.

We can now consider some sensitivities.

8.5.4 Hedging a low cap, with declining volume

Let us assume that for whatever reason, we are *certain* that our capped supply volume will contract at a known rate.

Consider the hedge for cap periods for which the observation period has begun. The hedge before the observation period is simply 50% of the expected volume. This is shown below (ignoring the cap end date). The Apr 2022 cap hedge, with the offsetting risk in Oct22-Apr23 is not shown.



Figure 19 Hedging the Oct 2022 cap, before the observation period, if volume is certain to fall. The box is without volume change from the mid 2021 supply volume, and the blue line is with volume change.

The hedge during the observation period is shown below. We end up with the precise amount of volume to deliver into the cap.

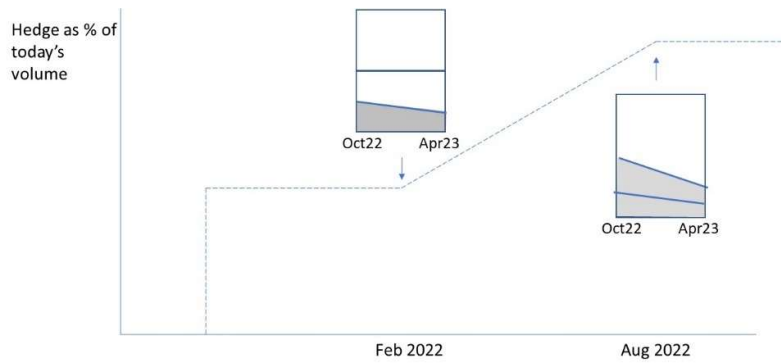


Figure 20 Hedging the Oct 22 cap declining volume in the observation period

We can see that the change in volume means that the adjacent caps no longer have perfect offsets for the pre observation period hedge. This is shown below, for the Apr and Oct 2022 caps, for the simple situation of constant rate of volume loss. We can see that in theory we should execute a flat sell in the Oct22-Apr23 period. The effect is similar to bringing the end date forward.

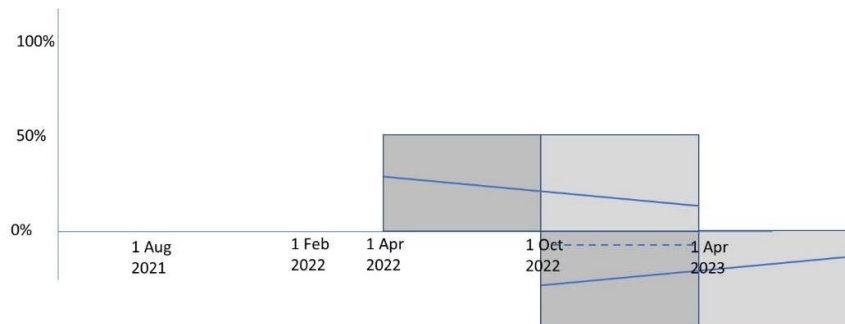


Figure 21 Hedging the Apr22 and Oct2 cap, with certain constant decline in volume. The dashed line is the net hedge.

We can apply the same logic to volume growth.

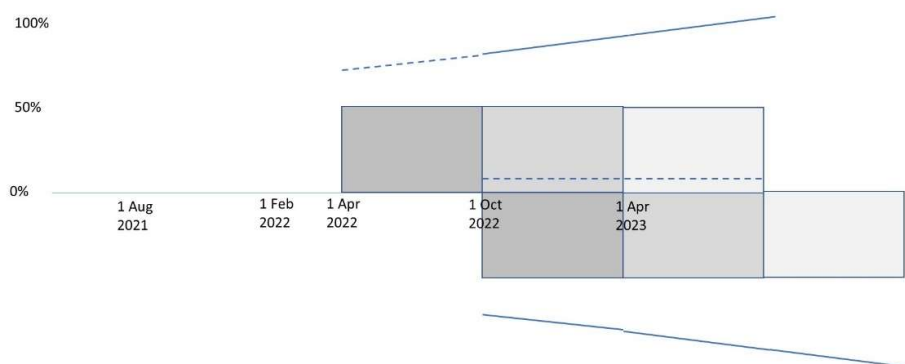


Figure 22 Hedge position (dashed line) for increasing volume

Increasing capped volume can arise in a number of ways such as; i) future SOLR gains, ii) rollover of FTC to capped SVT, iii) duty to offer arrivals such as home-move.

To all of the existing challenges for a supplier hedge selling we add the fact that consumption volumes per consumer are highly uncertain.

8.5.5 The effect of cap level

A very high cap is the same as no cap. Therefore the cap hedge is simply the SVT hedge.

A very low cap is the lowest tariff in the market. In the situation where the supplier may not default³⁹, the hedge is a pure index hedge. The forward hedge for a cap period in the middle of the series and before its observation period, is zero.

We can see the situation below. Each period is treated as standalone ignoring the netting of hedges of successive caps. The long term hedge beyond the end of the cap is also ignored.

On the left we show a future cap period just before observation begins. For simplicity we do not show the hedges for the adjacent periods or the short hedge. The hedge for the low cap is level across the delivery period and rises every day. The hedge for the high cap is a standard SVT hedge.

On the right, the grey box on the left shows the cap period just after the observation period has ended. The grey box on the right shows the cap period with some delivery inside the 18 months horizon but before the observation has begun.

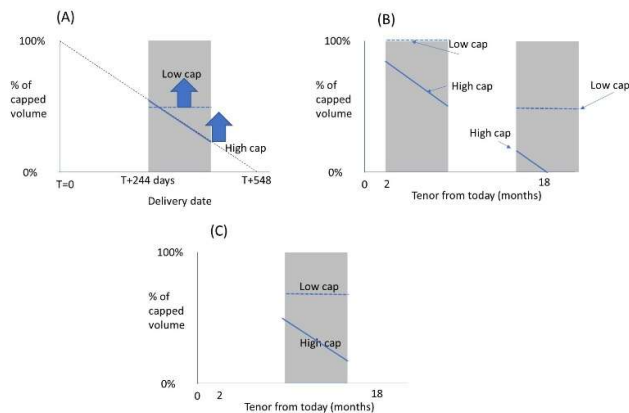


Figure 23 Hedges for high and low caps. (A) for a middle cap period. The arrows represent hedge development over time, (B) for a cap after completion of observation, and cap straddling the 18 months horizon. (C) an intermediate period during the observation period

An intermediate cap lies between the two extremes. As the delivery period approaches the cap will appear to be either high or low and the prospect of an in between level becomes less⁴⁰. In the long term, the uncertainty in relative level drives the hedge down (since uncertainty generally drives hedges down). We can see that the intermediate period has a kinked structure which gradually develops to the sloping SVT hedge or the flat cap hedge, depending on the evolution of prices.

³⁹ For example by submitting a performance bond or other guarantee/insurance

⁴⁰ The situation is conceptually very similar to the one facing option traders as the expiry approaches and the market is trading close to the strike price.

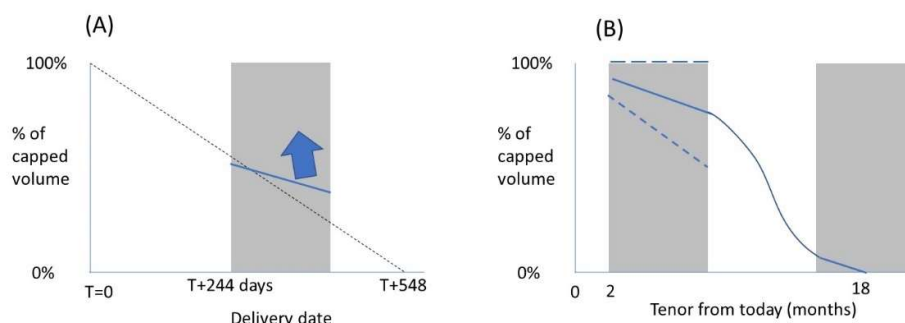


Figure 24 Hedging cap of intermediate level.

8.5.6 Volume risk per consumer

We now consider the risk to changing consumption per customer.

Gas is particularly sensitive to volume risk and hence gas rather than electricity is described here.

Demand is highly correlated to temperature and demand drives price. Hence we have a convexity challenge from this volume risk. The extent to which demand in one country drives price in that country is highly dependent on correlation between demands in different places, short term logistics costs and options (e.g. LNG and pipes), and the price elasticity of production and storage. Suppose that the supplier hedges the cap to Seasonal Normal Temperature demand expectation. If temperature falls, then demand falls and so price falls⁴¹. The supplier must sell back the hedge at loss. If temperature rises, then demand rises and so price rises. The supplier must buy more hedge at the new high price. Hence the supplier loses on any movement of temperature/price/demand. This is called a convexity risk and cannot be hedged simply⁴². Furthermore, the “swing” risk, in which the volume is the same but the date of peak volume moves, is a difficult risk to value and hedge. The last time that this risk happened at scale was in the cold snap in 2005 that caused gas wholesale prices to rise above the prevailing retail prices, with no time to change retail prices. There were widespread supplier losses and some exits.

Since it cannot be hedged effectively, the risk must be absorbed. The extent to which the expectation cost and the cost of risk are captured in the cap is open to question.

Since the risk cannot be hedged by forward contracting⁴³, then it exacerbates the problem of inadequate hedging by suppliers (i.e. the hedgeable risk that was not actually hedged).

8.5.7 The effect of uncertainty on hedging

⁴¹ The temperature, demand and prices just after new year in the UK provide a good example. Temperature was a record high and prices went to zero.

⁴² Competition drives the supplier to be slightly short of the theoretical hedge but cost of risk drives the supplier to be slightly long. The convexity cannot be hedged by dynamic hedging, due to the strong non normality of price returns. Price Contingent Weather Swaps have been transacted in the past but these are complex instruments with very limited availability and liquidity.

⁴³ When all stochastic factors are stationary, and the correlation risks are limited, then in theory the risk can be reduced by a “replicating strategy” dynamic hedge. In practice this is highly complex and market not stable enough.

We begin here with the statement that it is welfare and game theory optimal for suppliers' SVT hedges to conform to a focal point that is represented by the average⁴⁴ hedge of other suppliers. We make a second statement that with finite capital (which always applies) the risk of being caught long of medium term hedges is worse than the risk of being caught short. For brevity, neither statement is qualified here. The outcome of these two statements is that *uncertainty reduces the length (in volume and duration) of the optimum hedge*. This feature has in practice a substantial effect on the current crisis.

For present purposes it is sufficient to note this conjecture. In particular, the optimum supplier hedge for the purposes of consideration of the licence condition, has uncertainty that is bounded in one direction. i.e. the regulator can conjecture the maximum hedge but not the optimum hedge. The open hedge compensation at the maximum hedge is therefore an upper bound.

8.5.8 Moral hazard in hedging (including the MSC)

The standard moral hazard in hedging is well known and much discussed. A supplier undercuts the market, makes substantial customer gains, and does not hedge. If the market falls then the supplier makes substantial profits that go to dividends and/or executive remuneration. If the market rises then the supplier exits in default (and the executives may either focus on a related subsidiary of the parent company or start another supplier). It is possible for the executives and/or shareholders to lock in certain gains by executing hedges for their own account, albeit this ranges between immoral and illegal.

A recent moral hazard has emerged, in which an under-hedged⁴⁵ supplier is faced with likely bankruptcy in a risen market due to the *inadequate* hedge. The supplier then sells the hedge, which is "in the money", thereby locking in a hedge gain. If the market rises, then the supplier exits in default. If the market falls, they buy back the hedge at a later date.

Note that other moral hazards affect hedging. Suppose for example that a supplier has a new customer only tariff, which it prices aggressively. A tactic might be lose customers on the cap, claim the MSC and gain them back at FTC (with no MSC to pay as the customers will be on FTC), possibly below the competitive rate. The cap hedge is then unwound on customer loss and the FTC hedge instated on customer gain. The Ofgem proposal to disallow closed tariffs closes this opportunity.

8.5.9 Hedge considerations in switching during FTC or after FTC contract end

The most basic hedge for a Fixed Term Contract is shown in figure 12. Even with the simplifications of constant demand this is still much simplified. The hedge reduction for mid-term exit with different levels of exit fees is shown below. The kinked structure is a result of the market divergence from its level at hedge time increasing⁴⁶ over time, whilst the residual period over which the open hedge applies is decreasing over time⁴⁷. The supplier can set an FTC exit fee and therefore does not need an MSC.

⁴⁴ "Average" is somewhat of an over-simplification but it is sufficient here.

⁴⁵ Here "under-hedge" uses the lay meaning of hedging less than indicated from the risk. The more formal term, meaning hedging broader risks, is not used here. In the example above, executives who did not hedge the company risk but did hedge their own risk would formally be under-hedging.

⁴⁶ In proportion to the square root of elapsed time

⁴⁷ The analytics here are very similar to those of the credit risk for forward contracts, sometimes called credit equivalent exposure

There is also a hedge beyond the end of the FTC. This is shown below for different levels of differential between capped SVT and prevailing FTC. Put simply, with a low cap, the customer is certain to roll to it. With a high cap, the customer may roll to SVT, at least for a period.

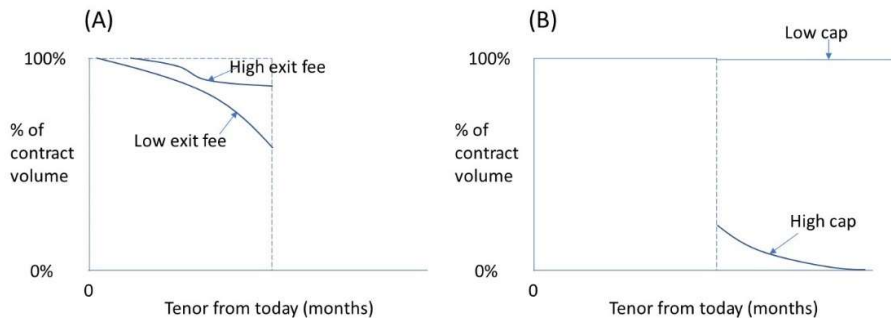


Figure 25 Schematic diagrams for FTC hedging. (A) less than 100% hedging within FTC term according to level of exit fee. (B) hedging beyond the FTC for different levels of expected differential between prevailing FTC and SVT

The supplier's concern is that they may get stuck with the customer with the cap below the competitive market. This happens when the market has risen to become backwardated (the conditions for long FTC contracts to be attractive as seen in figure 5). The supplier therefore needs to begin cap hedging if and when the market rises. Then the supplier, being short of the volume is exposed to a price rise (leaving them stuck with the customer but underhedged) or a fall (with a stranded hedge). This is taken into account when setting the FTC level and exit fee but these do not give protection beyond contract end and hence there is strong incentive to have a long dated contract end.

9 Appendix 2 – Supply continuity arrangements

9.1 The background in universal service (electricity)

The backgrounds in gas and electricity are different. The difference is not of particular importance here, and Universal Service does not exist in gas. Only electricity is described here.

Electricity became an essential service with the demise of towns gas (used for lighting, heating, and cooking) and the growth of domestic appliances. Later it became more essential for Information Communications Technology (ICT).

It became the right of every citizen and company to get a connection to the distribution network and thence a supply. When Regional Electricity Companies also billed customers, Universal Service also meant access to a tariff.

The Utilities Act 2000 split the distribution and supply licences, and the Secretary of State (SoS) laid licence conditions to enact the Act. In practice the regulator ran the consultations and made the recommendations to the SoS to sign.

Universal Service then split. The distribution company had to offer a *connection* and the supplier had to offer a *tariff*. The Supplier of Last Resort requirement essentially grew out of this Universal Service requirement. The first Ofgem guidance on Supplier of Last Resort⁴⁸ was in March 2001 and preceded the formal laying of the licence conditions by the Secretary of State (SoS), and we may therefore assume that the guidance was implicitly approved by the SoS.

9.2 Duty to offer terms

Whilst there have been skirmishes between suppliers and the regulator on precise interpretations, and development of licence conditions, the situation in primary and secondary legislation remains as laid out in the Utilities Act 2000. The legal status of licence conditions was never fully normalised. The initial licence conditions were not formal secondary legislation (i.e. numbered Statutory Instruments with formal reference to the clauses of the enabling primary legislation) but they were laid by the *Secretary of State*. The legal status of how licence conditions were laid and appealed changed over the years and the connection to primary legislation got lost along the way. The vires of the *regulator* to set and modify licence conditions *beyond the remit of the Utilities and Energy Acts* (and associated amendments to the Electricity and Gas Acts) is clear in theory (i.e. there is no remit), but unclear in practice (largely due to lack of clarity in the Utilities Act in relation to the term “supply”⁴⁹ in the context of each specific clause). In fact the legislative accretion of Ofgem’s powers since 2000 has been considerable⁵⁰ and many Secretary of State vires arguably fall within Ofgem’s vires, with the constitutional separation of powers and the independence required of a National Regulatory Authority somewhat blurred. This blurring is a considerable problem for Ofgem itself and for suppliers. With possibility of energy bills

⁴⁸ file:///C:/Users/drcph/Downloads/304-26march01_0.pdf

⁴⁹ The references are circular. Supply is what suppliers do, and suppliers are those who supply! We may interpret the acts of supply as (i) conveyance through the meter and (ii) collection, including Use of System, VAT and obligation costs. Other actions are *relevant requirements* and *conditions* of supply

⁵⁰ E.g. see chapter 3 [https://www.regulation.org.uk/library/2018-CCP&UKERC-Fairness in Retail Energy Markets Report.pdf](https://www.regulation.org.uk/library/2018-CCP&UKERC-Fairness%20in%20Retail%20Energy%20Markets%20Report.pdf)

potentially causing a temporary near doubling of headline inflation, Ofgem being at the heart of the solution, and HM Treasury virtually certain to have to step in not just in loans to the Special Admin supplier, this position is invidious for everyone. In practice this almost certainly means that Ofgem will need to explore the outer bounds of its vires whilst working with the Secretary of State to find solutions to stabilise the market. At the same time, there is certain black letter in the law, in particular in relation to conditions required for Ofgem to direct suppliers to offer terms, and the black letter may not be disobeyed.

In complying with the requirement to offer terms to individual consumers on request, in offering the tariff, the supplier had to comply with licence conditions, other relevant requirements in legislation, consumer law and competition law. There were otherwise no restrictions for bilaterally agreed contracts, other than various rules on locational and payment type differentials and end of contract term clauses. Contract type and contract type and level was generally driven by the commercial need of the supplier to move the consumer from deemed contracts. On price level of deemed contracts, the licence condition effectively bound them to cost reflectivity (including cost of capital, expressed as the need for profit). Suppliers could refuse to the *regulator* to offer terms, at *any* level, to new customers (i.e. customers not registered to them already), if their ability to supply other customers was excessively compromised.

It is very clear in law that suppliers *must* offer terms to *consumers*. It is also very clear in law that consumers who arrive *without agreed contract* to suppliers are *deemed* to have contracts, which are therefore *deemed contracts*. It was then inferred by the regulator, and not challenged, that; i) the *regulator* could direct a supplier to supply specific customers (i.e. with no direct overture by the consumer) if the ability to supply existing customers were not excessively compromised, ii) that this could be done for whole cohorts (i.e. SOLR), iii) in the absence of overture by the consumer and bilateral agreement, that the contract must be deemed. More recently; iv) the deemed contract satisfies the terms of the cap and is therefore capped. The cap legislation omitted specific reference to duty to offer terms and this remains a lacuna in the law. There was the implicit assumption that the cap was sufficient to cover costs, but this has always been questioned .

The regulator must have regard to the ability of the efficient supplier to finance its authorised (and obligated) activities. The regulator has taken a clear position in court that “have regard” does not mean “achieve”, but the case did not turn on this point and the extent of “have regard” has not been tested in power and gas case law. Similarly, “efficient” is undefined, and in the view of this author and others⁵¹, both Ofgem and the CMA made significant analytic errors in their approaches to efficiency. This has not been tested in court⁵². In this paper, the relevance of efficiency is encapsulated in the cap uplift U to the wholesale price, and assumption of U=0 is used for analytic purposes.

The directors of the suppliers also have other legal requirements. For example the Companies Act and the 1986 Insolvency Act preclude taking actions that cause excessive insolvency risk even if directed by the regulator.

Hence the current problem. We can divide this into two; i) standard duty to offer terms to individual consumers and ii) SOLR requirements in response to direction from the regulator.

⁵¹ E.g. see <https://www.eprg.group.cam.ac.uk/journal-article-the-challenge-of-removing-a-mistaken-price-cap-by-s-littlechild/>

⁵² Efficiency in wholesale markets is different to other efficiencies because all wholesale transactions are “at market” and the CMA deemed the wholesale market to be effective and therefore efficient. Since risk costs money, an efficient strategy minimises risk

The standard duty to offer terms can be dealt with simply. In the duty to offer terms, the supplier is not⁵³ confined to a particular contract type. Whilst duty to offer is normally observed by offering SVT, suppliers will clearly not do this when SVT is capped below costs. Suppliers may instead offer FTC. Provided that suppliers can reasonably demonstrate good faith in offering terms, then there is no legal compulsion on the terms and no merit in attempted regulatory compulsion. Tests of good faith would be for example excessively high tariff rates, excessively long contracts and (in concert with long contracts) excessively high exit penalties, as well as other items such as large required customer deposits. In addition it could conceivably be argued by the regulator that excessive length is an unfair contract term and therefore disallowed under “standards of conduct” licence condition 0 and consumer protection law in general.

This leaves us with SOLR. There is a real problem here because; i) the requirement to have SOLR has been clearly the case with many supplier exits in default, ii) the legal architecture precludes regulatory compulsion in all instances, iii) the uncertainties about the cap (existence in primary legislation, annual continuation, structure, level) are so high that they cause great difficulties in hedging.

Hence the need for creative solutions by the regulator, of which the current proposal, is one.

9.3 Deemed and default tariffs

In electricity, deemed contracts are a construction from the Utilities Act 2000⁵⁴. No one is allowed to consumer electricity through distribution wires other than by a contract with a supplier.

To normalise the situation where there is no contract agreed, the consumer is “deemed” to have a contract with a tariff. Deemed contracts may not be “unduly onerous” (SLC7), and one way of being unduly onerous is if they significantly exceed the costs of supply. In *practice*, suppliers use their Standard Variable Tariffs for residential deemed contracts, other than in SOLR situations.

Where a customer had a contract that ended, and they have not either left the supplier or re-contracted a tariff, but they remain connected to the network, the customer does not roll on to a deemed tariff. They roll on to a *default* tariff. The difference between deemed and default is significant for business customers. For residential customers they have tended to be the same level as SVT. Currently SLC22.7 governs the end of Fixed Term Contracts and requires roll to the supplier’s cheapest variable tariff.

This is clearly of importance now. A supplier can; i) structure the FTC to have a distant contract end date, possibly with tariff rolls upwards to schedule, so that the contract never becomes a default contract, ii) impose exit penalties, iii) block customer exit if debt is unpaid. All of this subject to consumer law, competition act and standards of conduct SLC0.

However, formally, a *deemed* contract (such as an SOLR contract) cannot roll on to a default contract because there has never been a bilateral agreement between customer and supplier.

⁵³ NB, on 12th Nov 2021, the Telegraph reported that Secretary of State Kwasi Kwarteng was “furious” in relation to suppliers’ approaches to gain refusals, and had ordered an urgent investigation by Ofgem into the matter. On 24 Nov 2021 MP Alan Brown asked in Parliament “Can the energy companies actually refuse to take new customers, and what discussions is the Secretary of State having on that?” It was not answered at the time.

⁵⁴ This amended the Electricity Act 1989. Deemed contracts did not exist in electricity before that. In gas they were introduced in 1995

9.4 Supplier of Last Resort

All consumers must have a supplier, otherwise the energy they use and the use of system costs that they incur, and VAT, will not be paid for. SOLR must be executed in a single day and hence there is no time for customer consent. Hence SOLR tariffs are deemed tariffs.

As noted above, suppliers have a duty to offer terms.

The legal architecture of the SOLR process arose from the duty to offer terms (which preceded the Utilities Act, in the Electricity and Gas Acts) and then the separation of supply from distribution in the Utilities Act.

The same legal architecture applied to cost recovery for the SOLR. In taking on customers, the supplier incurs one off costs and ongoing costs. Markets were only just liberalising at the time of the Utilities Act and it was not necessarily practical to charge a different rate to SOLR gained customers as to other customers. Therefore a specific reclaim for the one off costs was allowed for. The supplier was to gain approval from the regulator on the claim and could then claim a “levy” from the distribution company/companies relating to the customers. The distribution company could in turn recover the levy claim, with interest, by increasing distribution charges. In effect the Recovery mechanism was used, in which under or over recovery of price control agreed revenues caused adjustment in the distribution charges in the next⁵⁵ year.

With the increases in tariff differentiation by suppliers, it became more practical to offer a bespoke tariff rate to the SOLR customers. The degree of socialisation of costs was a matter of judgement by the regulator (in theory, under consultation). It became the custom of the regulator, with little complaint, to socialise widely. The Safety Net operates in a similar manner to its equivalent in banking – the Financial Services Compensation Scheme⁵⁶. Customers defaulted on were reimbursed from a central scheme. The central scheme was paid into by suppliers and ultimately passed through to consumers via the levy.

Note that there is currently a gap in the SOLR architecture. If a customer has a positive account balance and they fear default by their supplier, they cannot leave the supplier because then they lose the Safety Net insurance. This is a potentially significant effect in the current default spiral. Note that it is not straightforward for a customer to reduce the account balance unilaterally, for example by cancelling direct debit, as this may incur a negative credit reference, and the direct debit discount is lost.

9.5 Levy claims

If a supplier’s licence is removed then the customers are stranded, albeit they continue to consume. It is therefore necessary quickly for the customers to have suppliers, so that they can have tariffs and bills and the energy and use of system can be paid for.

Since competition arrived, it became possible for a supplier to gain customers from the incumbent Regional Electricity Company but then become insolvent. Hence there needed to be a process quickly to appoint a Supplier of Last Resort. Ofgem can direct a supplier to be SOLR, even against the supplier’s will, subject to certain conditions.

⁵⁵ The operation of the cash flow in relation to levy claim and levy recovery is under consultation

⁵⁶ The FSCS was set up explicitly in section XV of the Financial Services and Markets Act 2000. The safety net was not in the Utilities Act licence conditions, and its legislative backing has never been established.

The SOLR tariff may be insufficient for the SOLR to recover costs. For example; i) there may be high one-off costs that are not recovered in tariff if the customer soon leaves the SOLR, ii) there may be operational or legal (e.g. a cap) limit on the tariff, so that ongoing costs are not recovered such as increased wholesale costs.

To contend with this, the levy was set up. In this the supplier may claim for costs of *supply* that are not recovered in the tariff. The claim is made to the distribution company by the supply company (after the Utilities Act, these became separate companies). The distribution company in turn recovers the cost through distribution charges.

The legal architecture is somewhat woolly. Competitive entry was not allowed before business and then domestic competition was enacted, enabled by the Gas and Electricity Acts. The Utilities Act did not fully clarify the contextual meanings of “supply”. Both licence conditions and custom and practice in levy claims have evolved over the last 22 years. Broadly speaking the current process is; i) the supplier (ideally) indicates the scopes and amounts of levy claims when they participate in the mandated tender for SOLR, ii) the levy claim indication plays a role in the selection of the SOLR, iii) *following* appointment of SOLR, the claim is subject to public consultation, iv) in practice there is no evidence that consultation has changed any “minded to” claim approval.

9.6 [The SOLR rate and the cap](#)

It is clear that the tariff is a deemed contract and not a default contract. For this reason, it is not straightforward to argue that the contract has an end date (six months, which is how long the rate must be held for⁵⁷). Without a bilaterally agreed end date, it is subject to the cap and hence must drop within the 6 months if the cap has fallen in that time.

Since the cap falls below the competitive rate, it is clear in law that the SOLR may claim in the levy for wholesale costs, the regulator may award them, and that the distribution company must pay and may then reclaim with interest. Nevertheless Ofgem has discretion and in addition subjects levy claims to consultation and hence there is risk to the SOLR that they may not be awarded a claim at its full amount.

There is high danger that awarding consumers, who were on tariffs too low to be sustainable, monies from other customers, who were generally on higher tariffs and who are in general more disadvantaged in life, is regressive. At this point in time however, although this outcome may be counter to policy, it is consistent with law.

9.7 [Special Administration](#)

Special Administration was set up in the 2004 and 2011 Energy Acts in order to deal with “too big to fail” companies in default. It is being enacted for the first time with Bulb Energy.

In effect, the government steps in (the Secretary of State for energy, backed by HM Treasury) to underpin the financial operation of the company. The cost is eventually mutualised back to energy consumers via transmission charges.

The legal architecture is entirely different to SOLR. In fact they do not mesh well. In particular, SOLR *requires* licence revocation but Special Admin *precludes* licence

⁵⁷ Note that if the cap is expected to rise, as the legislation stands, SOLR customers are protected from the rise until the end of the 6 months. The legal conundrum on the ability to direct suppliers to be SOLR is in theory solved by levy claim. It is clearly not within policy for SOLR customers to receive this extra cross subsidy and there are various legal routes to avoid this.

revocation. Whilst there will be significant potential for legal challenge to the execution of Special Admin, the legal position is in fact highly unclear, including the potential for collective and class action. There is in practice significant room for government, and the greatest consideration may well be ex post judgement of its actions, in the light of government action with banks in the 2008 financial crisis. Although we have seen some defaults on customer account balances by the state (e.g. Nottingham City Council's Robin Hood Energy), it seems very unlikely that HM Treasury will sanction⁵⁸ default on Bulb Energy customers' account balances. This is relevant because, unlike in SOLR, the customers with positive account balances are not effectively locked in to the Special Admin supplier. Nevertheless, if they switch, they face the risk of moving to a supplier to whom they get locked in if they initiate (e.g. by mandated deposit) or develop a positive account balance. They may also stay, on the basis of the potential of moving to an SOLR of some form and being temporarily protected from a cap rise within six months.

Of interest to the Market Stabilisation Charge is the way that customers can be divested from the firm in Special Admin.

In the absence of the MSC, then the customers could leave in droves to FTC as the wholesale price falls. Indeed Ofgem may enact or encourage Collective Switches from the Special Admin supplier, with limited fear of legal challenge on grounds of discrimination.

We do have the current oddity that it is reported in the press that government does not enact/sanction the hedging of Bulb's exposure. This makes any MSC payable to Bulb indeterminate. In theory, government support to Bulb is only temporary and all defaults are socialised to consumers rather than taxpayers. This seems clearly to preclude Bulb from receiving MSC.

Ofgem may not, without primary legislation (which may well be a good idea), *direct* the SOLR process for the customers of the Special Admin supplier whilst it has a supply licence. It can organise collective switches and indeed has some powers to gain customer information to drive the process, but gaining suppliers cannot be directed to engage in collective switch, nor can customers be moved without a final opt in. Hence collective switch cannot be used for least disorderly wind down of the special admin supplier until market conditions make this attractive for gaining suppliers.

⁵⁸ On 24 Nov 21 Secretary of State Kwasi Kwarteng stated in Parliament that consumer balances would be protected throughout the process