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# Inattention vs Switching Costs: An Analysis of Consumers' Inaction in Choosing a Water Tariff*

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July 2021

**Abstract**

This paper studies consumers' choice between two different water tariffs. We document a large inaction in a novel setting where customers face a binary decision and receive simple, detailed and personalized information about the financial savings they would obtain if they were to switch water tariff. Our empirical framework separates two sources of inertia: inattention and switching costs. The model estimates that half of the 50 thousand customers in our sample are not aware of the opportunity they are offered and that, conditional on paying attention, median switching costs are £89. A model where all customers are assumed to pay attention instead delivers implausibly high switching costs, with a median of £482. Looking at the characteristics of the households, our results confirm previous findings that areas where households have higher levels of education or the proportion of minorities is lower, display a higher responsiveness to potential savings. The new insight offered by our analysis is that it is the level of attention, and not the switching costs, that differ across levels of education and ethnicity. Our findings suggest that policies aimed at increasing attention can play a central role in fostering competition among suppliers and reducing inequalities.

*Keywords*: inattention, switching costs, tariffs, water

*JEL*: D12, L95, Q25

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# 1 Introduction

There is increasing evidence that people often fail to take actions that would benefit them financially. For instance, Keys et al. (2016) find that approximately 20% of U.S. households failed to take advantage of lower rates by refinancing their mortgage, with a median present-discounted cost of $11,500. Two different but not mutually exclusive explanations can justify the pervasiveness of this behavior: some individuals may fail to consider the potential gains, because they do not pay attention, while some others may assess that the gains are not worth the hassle. Spending time and effort to gain a few dollars may well be reducing utility, whereas forfeiting an opportunity because of unawareness implies that the benefits may be worth the costs, but individuals do not have the information to make such comparison. Understanding the source of inaction is important to define the most effective policies to encourage consumers to take action, with the aim of, for instance, increasing competition among firms or decreasing inequalities. For example, simplified application processes for social benefits may be effective if the main barrier for applicants is transaction costs, but may not be so effective if the main issue is instead lack of attention.

In this paper, we examine the choice of water tariff among more than 50,000 households in the South-East of England. Between 2010 and 2015 a compulsory metering program saw the installation of water meters in all houses where it was technically feasible. Soon after installation, households were moved by default to the new metered tariff. However, they were also offered the possibility to pay for two years a transitional tariff, called changeover tariff, a combination of the metered tariff and the "old" unmetered tariff, based solely on the characteristics of the house. What we uncover is massive inaction by consumers, who for the most part fail to take advantage of the option and, as a result, end up paying higher water bills, losing on average £117 (median £79). This despite consumers face a rather simple binary choice, whose financial implications are clearly communicated and that requires only a telephone call.

To understand the sources of consumers' inertia, we define a simple empirical framework whereby the probability that an household take advantage of the changeover tariff depends on two different elements: attention and switching costs. The former refers to the likelihood that households are aware of the changeover tariff, having read and understood its characteristics, while the latter refers to the probability that, conditional on paying attention, the benefits from changing contract are higher than the latent costs of requesting the switch of tariff. In this respect, our work is related to the one by Heiss et al. (2021), who also investigate the relative importance of inattention and switching costs in explaining consumers' inertia in health plan choices. However, in our study, customers are facing a simple binary choice, in a setting where the costs of obtaining and processing the information about financial gains and of carrying out the switch can be expected to be considerably lower than those involved with the health plan choice. Furthermore, the identification strategy they use to estimate the two sources of inertia is very different from the one we use in this paper. In Heiss

et al. (2021), identification relies on the fact that the attention stage excludes information on new plan features that are not observed by inattentive consumer, while the plan-choice stage excludes past information that is irrelevant for the new enrollment period. Our identification strategy makes use of a particular feature of our data, namely the fact that each household receives information about the specific financial gains they could obtain if they decide to adopt the changeover tariff: information that cannot affect the probability of attention because the financial gains are revealed only after an household reads the documents notifying them about the existence and structure of the tariff. In other words, customers can learn about their potential financial gains only by paying attention and, therefore, these gains are logically excluded from the attention stage.

To gauge the importance of modelling inattention, we estimate first a restricted model assuming that everyone is aware of the alternative tariff. Using this model we estimate the median switching costs to be £482, an amount unrealistically high considering the low effort required to adopt the changeover tariff, i.e., making a telephone call. However, in a full model that allows for inattention as an additional source of inertia, the median switching costs are estimated at a more reasonable figure of £89. Furthermore, we show that around 50% of households fail to take action because of inattention. Compared to an unconditional probability of switching of 28%, emerging from the restricted model, we find that, conditional on paying attention, the probability of switching is a much higher 58%. Given that the promotion of an increase in competition among suppliers is a centrepiece of market regulation, in particular for utilities, and that, to be effective, this needs active consumers, our empirical analysis suggests that policies aimed at increasing attention are particularly important.

This paper contributes to a growing literature documenting and explaining the root causes of consumers' inaction.[1] This has been observed in a variety of settings, including health insurance markets (Handel and Kolstad, 2015), retirement plans (Benartzi and Thaler, 2007; Madrian and Shea, 2001), and electricity (Fowlie et al., 2017). In the context of water (and energy) consumption, a paper by Tiefenbeck et al. (2016) shows the importance of inattention by consumers and the importance of saliency through an experiment with real-time feedback during showering.[2] As explained in Section 2, we study inaction in an environment where customers face a simple binary decision, potential gains are clearly explained, there is no role for brand loyalty and preferences for unobserved product characteristics. Thus, many potential explanations for inaction (e.g., search costs, choice overload, lack of salience, status quo bias) are unlikely to play a role. Furthermore, the simple decision setting and the provision of personalized information makes identification of the

[1] This is related to models of behavioural inattention, recently surveyed in Gabaix, 2019. Handel and Schwartzstein (2018) have reviewed the literature on information acquisition and processing.

[2] Also regarding water, Wichman (2017) studies information provision through a natural experiment and demonstrates how increasing bill frequency leads to higher water consumption. Szabó and Ujhelyi (2015) implement a randomized water education campaign to reduce water non-payment in South Africa and show the importance of reciprocity.

relative importance of inattention and switching costs cleaner compared to other studies that have focused on more complex settings (e.g., Heiss et al., 2021).

We also explore how different demographic characteristics are associated with the observed inaction, a topic of high relevance for policy-making, because of its equity implications. A higher level of inaction among poorer households compared to better-off ones, for instance regarding access to benefits, may make a policy regressive in its practical effects despite not being so in its design. We use a rich dataset combining billing data and customers' information with data on income, education and ethnicity at the neighbourhood level to investigate how these characteristics affect the probability of being attentive as well as the switching costs associated with the adoption of the changeover tariff. Our results confirm previous findings that areas where households have higher levels of education or the proportion of minorities is lower, display a higher responsiveness to potential savings. Letzler et al. (2017) exploit a natural experiment about a fraudolent subscription programme where letters providing the opportunity to cancel are sent to consumers. They find that "[c]onsumers from low socio-economic status (SES) neighbourhoods and racial and ethnic minorities were even less likely to respond to the notification letters than consumers from higher SES communities and consumers who were likely to be white". Beshears et al. (2015) study 401(k) plans and find lower opt-out odds for the low-income group, as well as for younger employees. Bhargava et al. (2017) find that low-income employees are significantly more likely to choose dominated health plan. Also Hortaçsu et al. (2017) find evidence of inaction being larger in "neighbourhoods with lower income, lower education, and more senior citizens". Sahari (2019) find a low sensitivity by low-income households to energy costs at the moment of making a long-term energy technology investment. The new insight offered by our analysis is that it is the level of attention, and not the switching costs, that differ across levels of education and ethnicity.

The rest of the paper is organized as follows. Section 2 describes the institutional setting, providing details regarding the tariff, the timing of the choice and the information given to customers, as well as highlighting how, in light of the existing literature, several institutional features should be conducive to an active choice by consumer. Section 3 presents our econometric framework and identification strategy, while Section 4 describes our data and provides some descriptive empirical facts about the uptake of the changeover tariff. The estimation results are presented and discussed in Section 5. Section 6 concludes by discussing the policy implications of our findings.

## 2 Institutional Setting

In this section we describe in detail what a changeover tariff is, the choices customers can take regarding it and the information provided to customers through the different stages of the metering process. This section is based on documentation sent by the water utility to its customers. Additional details on the metering programme and its impact on water consumption can be found in Ornaghi

and Tonin (2021). At the end of this section, we discuss how, in light of the existing literature, this institutional setting presents several characteristics that should minimise inaction.

## 2.1 The changeover tariff

The metered tariff consists of a standing charge and a volume charge. The standing charge is a fixed charge based on the size of the meter fitted to the property and covers the costs of maintaining the water services account. The volume charge is based on the amount of water supplied to the home, that is, the volume of water recorded on the meter in each billing period.

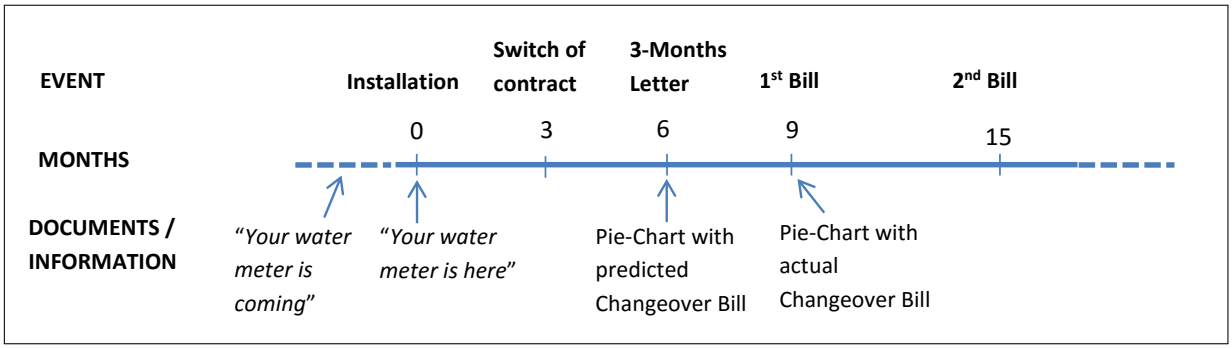
The unmetered tariff does not depend on water consumption and consists of a standing charge and a rateable value charge. The standing charge is a fixed amount for all properties and covers the costs of maintaining the water services account. The rateable value charge is based on the rateable value of the house. The rateable value was used as the basis for local authority taxation prior to 1990. Rateable values were set by the Valuation Office (part of HM Revenue and Customs) to reflect the rental value of the property. The rateable value is no longer used for taxation and no longer updated. The water company normally used the rateable value quoted in the Valuation List in force on 31 March 1990.

The changeover tariff is valid for two years after the switch of contract (see Figure 1) and it consists of a weighted average of the metered and unmetered tariffs described above. More precisely, during the first year after the switch, the changeover tariff is 1/3 of the metered tariff and 2/3 of the unmetered tariff, while during the second year the bill is 2/3 of the metered tariff and 1/3 of the unmetered tariff.

## 2.2 Information

Figure 1 summarizes the typical customer journey with the information received at the different stages of the programme.

Figure 1: Typical customer journey



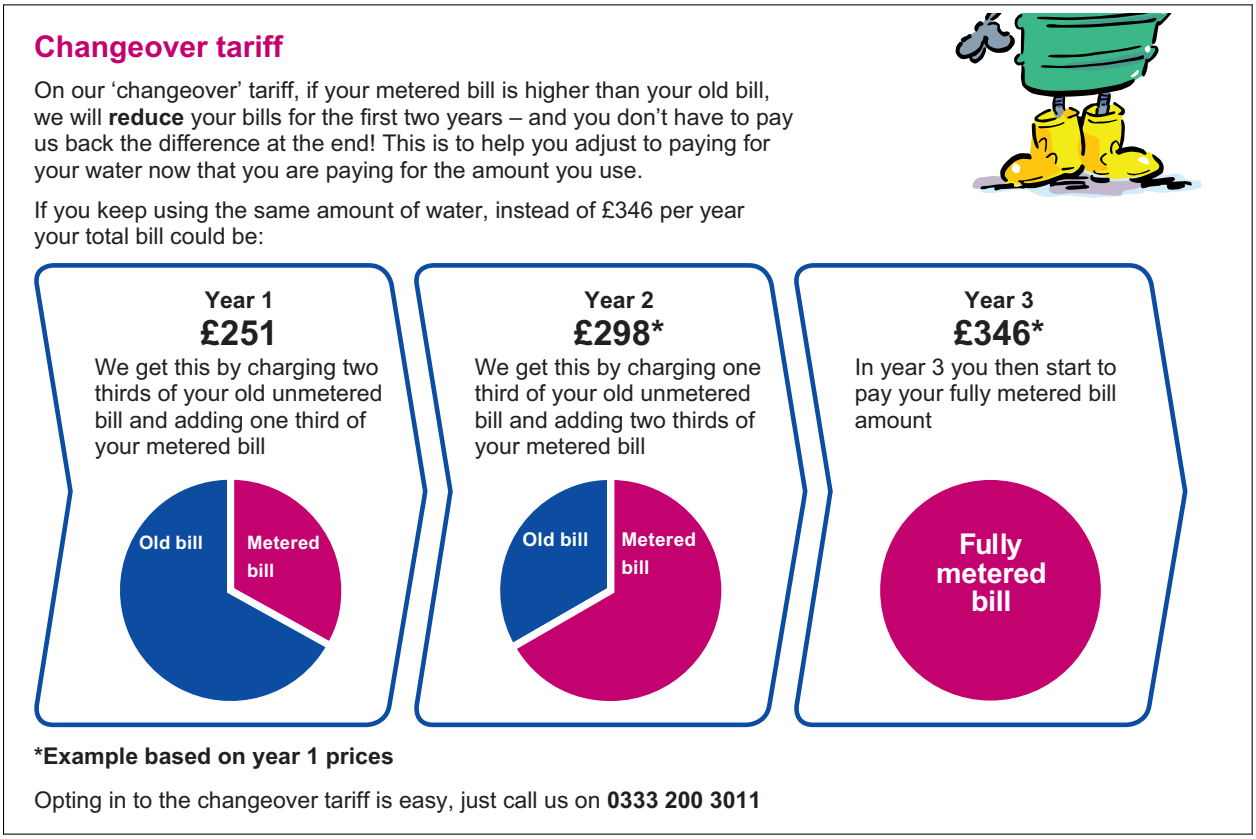
Approximately four to six weeks before installation customers receive a booklet titled "Your water meter is coming - part 1 of 2", where the changeover tariff is mentioned.[3] A brief mention to a 'changeover' period is also present in the leaflet titled "Southern Water's metering programme" that customers receive approximately three weeks before installation and that is also distributed at key locations within the installation area (e.g. post offices, libraries, ect..) On the day of installation, customers receive a leaflet titled "Your water meter is here - part 2 of 2". Here the changeover tariff is explained in more details. In particular, customers are informed that about three months after installation they will be automatically switched to the new metered tariff and that six months after installation, they will receive the so-called 3-Months letter "explaining how much water you have used and how much your first metered bill is likely to be if you keep using the same amount of water. You will also be given the choice to opt for our 'changeover' period of payment". Then, they are informed that about nine months after installation (six months after switching contract), they will receive their first metered bill and be given a second opportunity to opt for the 'changeover' period of payment. Finally, the leaflet explains the changeover period and provides an example based on a rateable value bill of £378 and a would-be fully metered bill of £450. The example is illustrated through a pie chart that shows how adopting the changeover tariff saves money for the customer (see in the Appendix an extract from the installation leaflet explaining the changeover tariff in detail).

Customers can get essential information about their consumption and payments from the 3-Months letter and the following bills. The 3-Months letter informs customers about their water usage in the first three months after the meter has been turned on. We report a sample in the Appendix, underlining in yellow the parts mentioning the changeover tariff. Figure 2 shows the key section of the 3-months letter dealing with the changeover tariff.

As can be seen, the letter contains a personalised pie chart, with calculations based on the actual unmetered charges applying to the customers and on a projection about metered charges based on the observed consumption in the three months period. Thus, customers not only receive information about the main features of the changeover tariff, but also a clear indication of the potential savings arising from it given their specific characteristics. Research by Samek and Sydnor (2017) shows how, in the case of health insurance, moving from describing the features of plans to providing information about their different financial consequences through "consequence graphs" greatly reduces the share of people choosing financially dominated options thanks to improved understanding. In our case, we would thus expect the clear representation of the financial consequences of adopting the changeover tariff to reduce the scope for misunderstanding. In the letter, it is also clearly indicated that

[3]The document reads as follows: "All our customers will be given the opportunity to choose a 'changeover' tariff for paying their water bills. This means that if your metered bill is higher than your old bill, we will reduce your bill for the first two years – and you do not have to pay the difference. This is to help you adjust to paying for your water when you are paying for what you use. Please be aware that you cannot opt for our 'Changeover' tariff until your meter charges start."

Figure 2: Main Information in 3-Months Letter




customers need to take action in order to adopt the tariff. In particular, under the pie chart it is mentioned how "[o]pting in to the changeover tariff is easy, just call us on 0333 200 3011". At the end of the page explaining the changeover tariff there is, moreover, the bright banner reported in Figure 3, making it very prominent that a call is needed to adopt the tariff.

Figure 3: Banner in 3-Months Letter


The first bill is sent after a further three months and also includes a personalised pie chart, highlighting both the yearly fully metered charge and the changeover charge under the assumption that the customer keeps using the same amount of water (see Appendix for a sample, with parts mentioning the changeover tariff highlighted in yellow). Also here there are multiple indications

that customers need to take action in order to switch to the changeover tariff. Under the pie chart it is indicated how "The charge for this period of £[personalized amount] is your fully metered charge. If you want to go on our changeover tariff just call 0333 200 3012 and we'll send you a revised bill. If you don't contact us you will stay on the standard metered tariff". There is once again at the end of the page the banner of Figure 3 and, in the following page, after detailing the charges, it is written "This is your first metered bill. For your first four metered bills, when your metered amount is higher than your old bill, you can go on our 'changeover' tariff - call 0333 200 3012 to go on this tariff."

### 2.3 Institutional setting and inaction

The specific institutional context we study tend to exclude many explanations that have been proposed in the literature as root causes of consumers' inertia, either in the form of inattention or switching costs. First, the choice we study is not a routine choice that, as such, can be easily overlooked. Instead, it is part of a considerable change in the way water is paid, the installation of a meter, that is therefore likely to focus attention on water consumption. Moreover, customers are reminded multiple times about the need to opt in. Therefore, lack of salience (as, for instance, in Chetty et al., 2009) is unlikely to be behind our results (or, at least, it is difficult to imagine many circumstances in which water tariffs would be more salient).

Second, customers who should opt for the changeover tariff experience by definition higher bills compared to what they used to pay. Therefore, loss aversion (documented, for instance, by Genakos et al., 2015 in the case of telephone bills) cannot be an explanation for the lack of action, but, on the opposite, should make customers more likely to act. Related to this, numerous studies have documented what has been called a "flat-rate bias", that is, a preference for payment plans that are less sensitive to actual consumption (e.g. Della Vigna and Malmendier, 2006; Lambrecht and Skiera, 2006; Ater and Landsman, 2013; Herweg and Mierendorff, 2013; see, however, on the opposite Miravete, 2003). Again, this cannot be an explanation in our context, as a "flat-rate bias" should induce people to opt for the tariff with a lower marginal price and higher fixed payment, that is, it should make it more likely to choose the changeover tariff. Along the same line, even in absence of any bias, due to the fact that future water consumption is uncertain, risk averse households should prefer the less risky option for a given expected payment, that is, should switch to the changeover tariff.

Third, the choice is time limited, so it cannot be postponed indefinitely, and this makes procrastination, due for instance to some present-biased preferences, a less likely explanation (O'Donoghue and Rabin, 1999).

Fourth, in our context search costs and choice overload (see, for instance, Chernev et al., 2015; Le Lec and Tarroux, 2020), potential explanations for lack of action by rational agents, are less likely

to play a role. Customers affected by the metering programme have simply to choose between two tariffs (changeover or metered tariff). At the same time, customers are given information not only about the features of the changeover tariff, but also about the financial consequences they are likely to face based on their own characteristics, which also reduces the likelihood of misunderstanding (Samek and Sydnor, 2017).

Fifth, differently from many other studies studying consumers' inaction, true or perceived brand effect (as documented in the case of electricity markets by Hortaçsu et al., 2017) is not at play, as there is no need (and actually, no possibility as the market is a local monopoly) to change company. Also, the fact that customers choose how to pay for the very same product avoids any potential confounding effect arising from taste heterogeneity for unobserved product characteristics.

Finally, before the compulsory metering programme, when the status quo for water bills was the unmetered tariff, customers could at any time opt to have a meter installed at no cost, but the customers in our dataset clearly did not do so. This means that our results cannot be due to a "preference for metering", for instance because metering is perceived as a fairer way of paying for water or because metering acts as a committment device to reduce consumption and, thus, for instance, benefits the environment (e.g., in a different context, Della Vigna and Malmendier, 2006). Then, due to the implementation of the programme, the status quo became the metered tariff. Some customers could gain financially by going back, at least partially and temporarilly, to the previous system through the changeover tariff, but most of them did not take advantage of this opportunity. Thus, in our setting, lack of action due to the role of the status quo as a reference point which alters preferences (as in Tversky and Kahneman, 1991) or due to customers "sticking with what they know" is also unlikely to explain why customers stick with the newly implemented default option even if it is disadvantageous to them from a financial point of view and they have repeated opportunities to take action.

To sum up, our decision setting is such that standard explanations for inertia proposed in previous studies should not play a critical role. Moreover, the fact that gains are clearly communicated and there are no issues of unobserved product characteristics, makes our setting particularly suitable to evaluate the relative importance of inattention and switching costs.

# 3 Empirical Framework

## 3.1 Model and identification

There are two reasons why household do not switch to the metered contract even though they would save money by doing so: (1) Inattention: Households may not be aware of the potential financial savings because they didn't read or understand the information they receive. (2) Switching costs: despite being aware, households decide not to go through the trouble of calling and switching

contract because the perceived hassle outweighs the promised savings. Here, we describe how we disentangle these two sources of inertia empirically.

To introduce notation, let $\pi_i^a(\mathbf{x}_i)$ denote the attention probability, i.e. the probability that household $i$ reads and understands the information letters and, more generally, is aware of the changeover tariff. We allow it to depend on sociodemographic characteristics $\mathbf{x}_i$. Let $\pi_i^{s|a}(\mathbf{x}_i, g_i)$ denote the probability of household $i$ switching *given* it pays attention. It naturally depends also on the individual amount of potential savings from switching, $g_i$, illustrated in the letters received from the water utility. So our identifying assumption is that potential savings from the changeover tariff affect the decision to switch but they do not affect awareness, since only customers that pay attention can learn about the financial gains from adopting the changeover tariff. To assess the credibility of this hypothesis, we include the unmetered bill, i.e., the only information that households may be familiar with, to the attention stage. Finding that the probability of paying attention does not increase for higher values of the unmetered bill would provide support to our identification strategy.

Overall, the probability of household $i$ switching to a metered plan is

$$\pi_i^s(\mathbf{x}_i, g_i) = \pi_i^a(\mathbf{x}_i) \cdot \pi_i^{s|a}(\mathbf{x}_i, g_i). \tag{1}$$

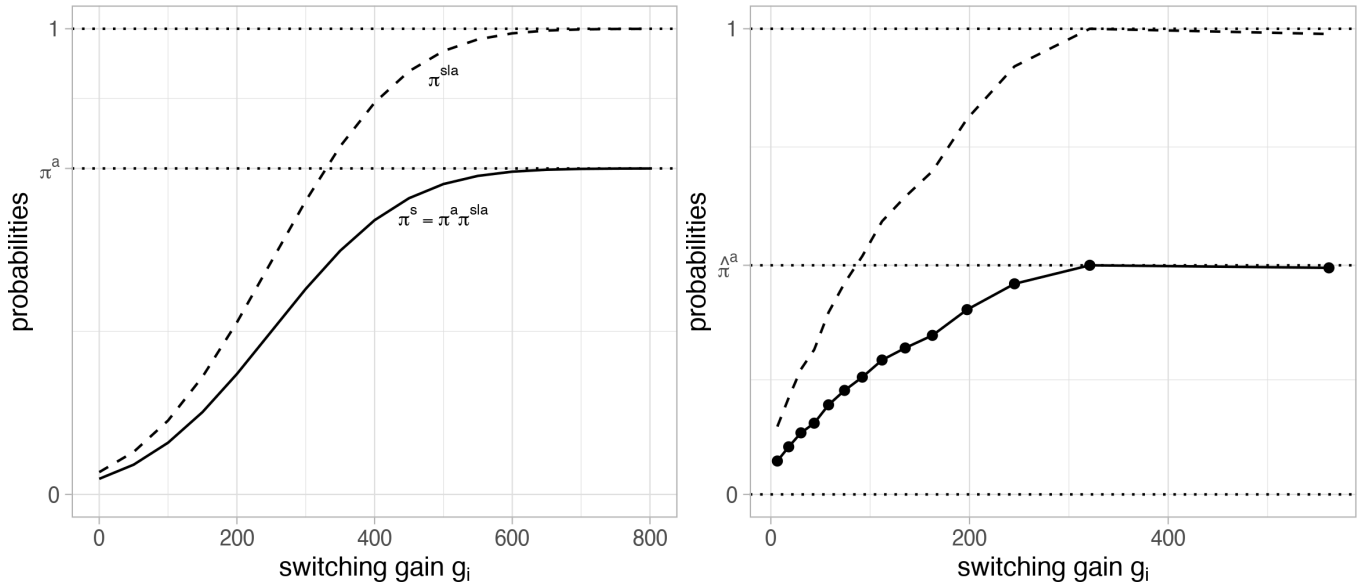
To understand how this works, let's abstract for the moment from sociodemographic differences, so we treat the attention probability as a constant $\pi_i^a$. We parameterize the switching probability in terms of individual switching costs $c_i$. Specifically, we assume that households who pay attention and are aware of the financial gains $g_i$ illustrated in the documents received from the water company, decide to switch if $g_i \geq c_i$. We, as researchers, observe $g_i$ and model $c_i$ as a random variable. For us,

$$\pi^{s|a}(g_i) = \Pr(c_i \leq g_i)$$

which is simply the c.d.f. of the switching costs $c_i$ evaluated at the observed gains $g_i$.

To illustrate the structure of the model, Figure 4(a) shows these probabilities for a hypothetical example. The dashed line is the conditional probability $\pi^{s|a}(g_i)$, i.e. the c.d.f. of switching costs. The attention probability $\pi_i^a$ is a fixed number (in the graph, it's 0.7). According to equation (1), the overall switching probability is simply $\pi_i^s(g_i) = \pi_i^a \cdot \pi^{s|a}(g_i)$, i.e. the c.d.f. of the switching costs scaled by a factor $\pi_i^a$. It converges to $\pi_i^a$ as $g \to \infty$, that is, as savings become very large, only those unaware of them do not take action.

In the empirical application, we observe $g_i$ and the decision to switch, therefore we can directly identify $\pi_i^s(g_i)$. Figure 4(b) shows the share of switching for 15 equal-sized groups of households according to their level of gains $g_i$ as points and a solid line. This can be considered as a very basic estimate of the function $\pi_i^s(g_i)$ without any sociodemographic characteristics. As expected,




(a) Model structure

(b) Empirical illustration

Figure 4: Model structure and identification

the switching rate clearly increases with $g_i$. This function converges to a number around 0.5 as $g_i$ grows. Our theoretical considerations suggest that this can be used as an estimate of the attention probability $\pi_i^a$. If 50% of the households don't pay attention, the overall switching can never exceed 50%.

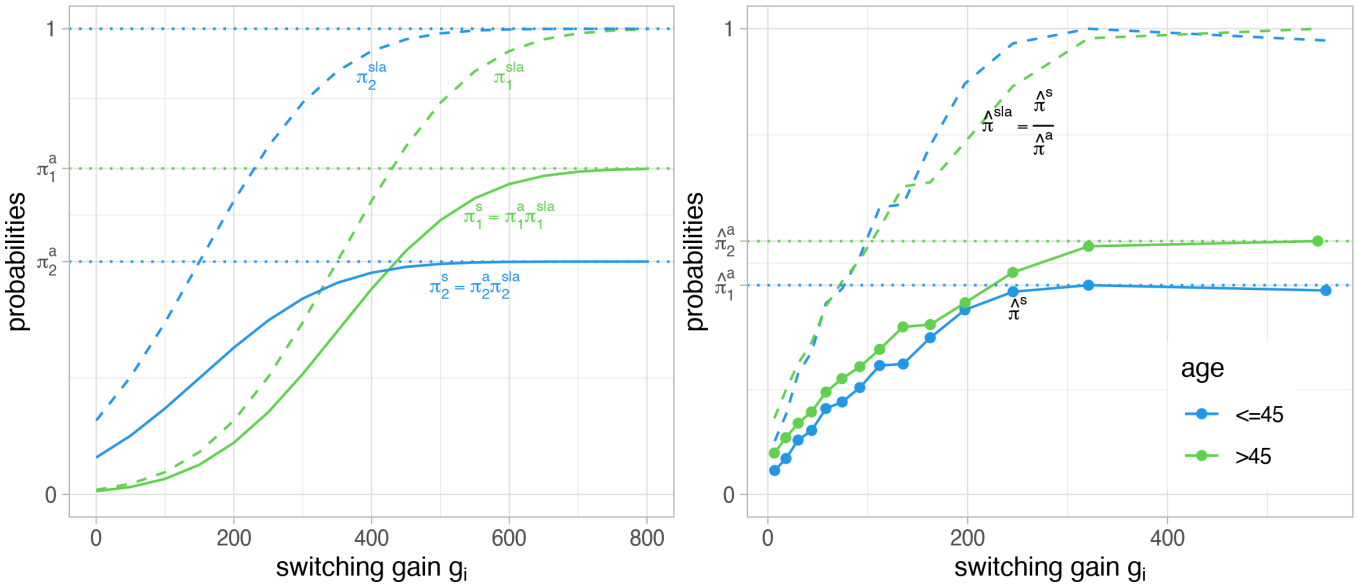
Once we have an estimate of $\pi_i^s(g_i)$ and $\pi_i^a$, we can simply use (1) again to get an estimate of switching probabilities conditional on attention, and in turn the distribution of the switching costs, as

$$\hat{\pi}_i^{s|a}(g_i) = \frac{\hat{\pi}_i^s(g_i)}{\hat{\pi}_i^a}.$$

In Figure 4(b), this estimate is shown as the dashed line. It crosses 50% at around 90 pounds which according to the model structure can be interpreted as estimated median switching costs.

To evaluate the effect of inattention on households' choice to adopt the changeover tariff, we also estimate a restricted model where all households are assumed to pay attention, i.e. the restriction $\pi_i^a(\mathbf{x}_i) = 1$ is imposed on the full model. As this restricted model consists only of the choice to switch contract, it attributes all inertia to the switching costs, thus inevitably delivering larger switching costs than those estimated with the full model.

We now analyze how sociodemographic characteristics can be used to separately identify their effects on attention probabilities and switching costs. If some households have the same switching costs but different attention probabilities, their $\hat{\pi}_i^s(\mathbf{x}_i, g_i)$ curves converge to different levels $\pi_i^a(\mathbf{x}_i)$. If they




(a) Model structure (b) Empirical illustration

Figure 5: Identification of sociodemographic characteristics

have the same attention probabilities but different switching costs, their $\hat{\pi}_i^s(\mathbf{x}_i, g_i)$ curves converge to the same levels but may be shifted left or right.

As an illustration, consider two groups of households: Group 1 has a higher attention probability but also higher average switching costs than group 2, so the overall difference in switching rates is ambiguous. Figure 5(a) depicts the switching probability of group 1 in green and of group 2 in blue. While the switching costs distribution is shifted to the left for group 2, it is scaled by a lower attention probability to arrive at the overall switching curve $\pi_2^s(g_i)$. As a result, its shape differs which then helps us to separately identify the two sources of inertia.

Figure 5(b) shows an empirical example. We divide our sample into two age groups and perform our illustrative procedure separately for these groups. This simple analysis is just for illustrative purposes since at this point, we don't account for any other covariates. In this case, switching converges to a lower number (implying lower attention) for the youngest group while more seniour households are more attentive. When we use these results on attention to identify the distribution of switching costs (the dashed lines), the differences are less obvious. The $\hat{\pi}_i^{s|a}(g_i)$ curves of the youngest households is slightly shifted to the left, which would imply lower switching costs. As mentioned, this is just an illustration and we now move to explaining how we estimate our comprehensive model.

### 3.2 Specification and Estimation

As explained in Section 3.1, the main structure of our switching model is

$$\pi_i^s(\mathbf{x}_i, g_i) = \pi_i^a(\mathbf{x}_i) \cdot \pi_i^{s|a}(\mathbf{x}_i, g_i),$$

where $\pi_i^s$ is the overall switching probability, $\pi_i^a$ ist the attention probability and $\pi_i^{s|a}$ is the switching probability conditional on paying attention which is driven by switching costs.

We write the attention probability similar to a simple probit model

$$\pi_i^a(\mathbf{x}_i) = \Phi(\mathbf{x}_i\boldsymbol{\gamma}),$$

where $\Phi$ denotes the standard normal c.d.f. Obviously, we cannot estimate this model directly since we don't observe attention. This specification is chosen for convenience but could easily be replaced by other specifications.

Once a household pays attention and therefore knows their potential gain from switching $g_i$, they compare it to their switching costs and make the switch if the net gain is positive. For convenience and ease of interpretation, we make a parametric assumption that the unknown switching costs are normally distributed:

$$c_i \sim \mathcal{N}(\mathbf{x}_i\boldsymbol{\beta}, \sigma^2),$$

where the household characteristics $\mathbf{x}_i$ that shift the mean switching costs can be the same as the determinants of attention. Conditional on characteristics $\mathbf{x}_i$ and the gains $g_i$, the individual probability of switching given attention is

$$\pi_i^{s|a}(\mathbf{x}_i, g_i) = \Pr(c_i \leq g_i | \mathbf{x}_i, g_i) = \Phi\Big(\frac{g_i - \mathbf{x}_i\boldsymbol{\beta}}{\sigma}\Big).$$

This is again similar to a probit model, but switching is not determined by whether unit-free utility is positive. Instead, households switch whenever the gains exceed the switching costs. Since we directly observe the switching gains $g_i$, we can explicitly estimate switching costs in pounds sterling as well.

Putting everything together, we have

$$\pi_i^s(\mathbf{x}_i, g_i; \boldsymbol{\beta}, \boldsymbol{\gamma}, \sigma) = \pi_i^a(\mathbf{x}_i) \cdot \pi_i^{s|a}(\mathbf{x}_i, g_i) = \Phi(\mathbf{x}_i\boldsymbol{\gamma}) \cdot \Phi\Big(\frac{g_i - \mathbf{x}_i\boldsymbol{\beta}}{\sigma}\Big). \tag{2}$$

We estimate the fully parametric model using maximum likelihood. The likelihood contribution of

each household $i$ is simply

$$l_i(\boldsymbol{\beta}, \boldsymbol{\gamma}, \sigma) = \begin{cases} \pi_i^s(\mathbf{x}_i, g_i; \boldsymbol{\beta}, \boldsymbol{\gamma}, \sigma) & \text{if the household switches to the changeover tariff} \\ 1 - \pi_i^s(\mathbf{x}_i, g_i; \boldsymbol{\beta}, \boldsymbol{\gamma}, \sigma) & \text{otherwise.} \end{cases} \tag{3}$$

# 4 Variables and Descriptives

The institutional framework of the changeover tariff suggests that customers should not easily disregard the information in the 3M letter and following water bills. They should also not find it too difficult to process and act upon such information. In order to understand what socioeconomic characteristics make it more likely that a customer takes advantage of the changeover tariff, we construct a rich dataset by combining billing data and customers' information provided by SW with data on income, education and ethnicity at Output Areas (OA) level from the Office for National Statistics (ONS). OA is the lowest geographical level at which census estimates are provided. These were built from clusters of adjacent unit postcodes and, in 2011, had an average population of 309.[4]

Our initial dataset includes around 156 thousand customers who, by October 2015, have had a metered installed for the first time on their properties and have received at least four bills under the new tariff. Recall that after four bills (i.e. two years after switching contract), all customers, including those who applied for the changeover tariff, pay the normal metered bill. The sample we use to estimate our econometric specifications refers to the 50,920 households that have positive gains from adopting the changeover tariff (customers whose changeover bill is higher than the normal metered bill do not save money to call the water utility) and for whom we can observe all their individual characteristics and socioeconomics indicators at the OA level.[5]

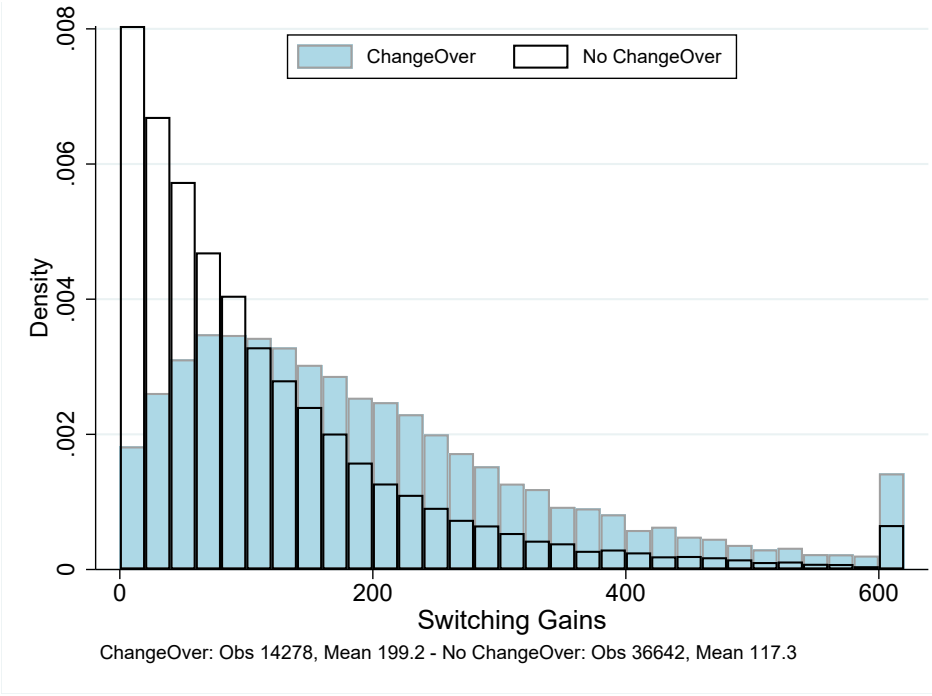
Figure 6 shows the distribution of gains for these 50,920 households, distinguishing between the 14,278 households who asked to be switched to the changeover tariff and the 36,6442 who did not (resulting in a switching rate of 28%). Figure 6 makes clear that while the great majority of households that did not switch have gains lower than £50, there is also a large portion of customers that would have obtained non trivial savings by adopting the changeover tariff. Indeed, the average gains over two years for non callers is £117 (median £79), an amount that should be enough to compensate the hassle of making a phone call to the water utility. Not surprisingly, the average gain of the 14,278 customers who did call is much higher, at £199 (median £165), thus confirming that financial gains increase the probability of calling.

Table 1 reports descriptive statistics of the variables used in our empirical model for the 50.920

[4]For details, see:`http://www.ons.gov.uk/methodology/geography/ukgeographies/`

[5]For around 4,000 customers we cannot observe age or number of occupants. For around 1,600 households we could not match the reported postcode to any OA. These households are not included in the analysis.

Figure 6: Distribution of savings




*Notes:* The figure plots the distribution of gains over two years for households who applied for the changeover tariff and those who did not. We windsorized the distribution just above £600.

households with positive gains. The average unmetered bill is £206 (median: £209). Considering that the unmetered bills do not change much over time, these households would have paid on average, a bit more than £800 over two years. This variable is included in the empirical analysis to check our identifying assumption that gains cannot affect the probability of paying attention: since the unmetered bill is the only information that households may be familiar with, finding that the probability of paying attention does not increase for higher values of the unmetered bill would provide support to our econometric approach.

The mean (median) age of the contract holder is 51 (respectively, 50). These figures are very similar to those reported in the Labour Force Survey for England as a whole, which indicates that the median age of the household reference person in 2014 was 51 years.[6] In the empirical analysis, we divide households in three age groups: below 35, between 35 and 65, and above 65. Furthermore, the dataset reports the number of occupants. Most of the households consist of two or three people, with a maximum value capped at six when there are more than six people living at the same address. As the number of households in this group is rather small, in the empirical analysis we will group

[6]The reference person is the adult contributing most to the total income of the household, a concept not equivalent to the contract holder, but nevertheless informative.

households with 5 and 6 occupants together. We anticipate that the size of the household can affect the probability of switching by affecting both the probability of paying attention and the costs of considering and carrying out the switch of contract.

The data we obtained from SW also indicate whether customers have set up an automatic payment for their water bills, called direct debit. Table 1 shows that this form of payment is used by around 51% of the households in our sample. We include it in our model since it represents decisions related to the water bill. We suspect that households who value the convenience of using direct debit might also have a higher distaste for the inconvenience of calling SW and therefore higher switching costs. We don't have strong predictions about how this variable is related to attention.

Table 1: Summary Statistics

| **Variables** | **Mean** | **Median** | **SD** | **Min** | **Max** |
|---|---|---|---|---|---|
| *SW Data* | | | | | |
| Call indicator | 0.280 | 0 | 0.449 | 0 | 1 |
| Changeover Gains | 143.5 | 99.6 | 151.3 | 0.1 | 4999 |
| Unmetered Bill | 206 | 209 | 68.69 | 1 | 1006 |
| Age | 51.1 | 50 | 12.7 | 17 | 102 |
| Occupants | 3.2 | 3 | 1.09 | 1 | 6 |
| Direct Debit | 0.515 | 1 | 0.499 | 0 | 1 |
| *ONS Data* | | | | | |
| Education Score | -0.264 | -0.224 | 0.178 | -0.94 | -0.004 |
| Income Score | -0.139 | -0.12 | 0.082 | -0.47 | -0.01 |
| Homogeneity | 0.761 | 0.807 | 0.167 | 0.164 | 1 |

*Notes:* Statistics for the 50,920 customers with positive gains if they were to adopt the changeover tariff. Call indicator is a dummy taking the value of 1 for customers who adopt the changeover tariff. The unmetered bill shows the amount of money these customers used to pay before a meter was installed. Direct Debt indicates whether an household has automatic payment for water bills. Age is the age of the contract holder. Occupants indicates the number of people living in that household. Education Score measures the extent of deprivation in terms of education, skills and training in an Output Area. Income Score measures the extent of deprivation in terms of low income in an Output Area. Homogeneity is a measure of similar ethnical groups in an Output Area.

As for the variables obtained from ONS, the education score measures the extent of deprivation in terms of education, skills and training in an area,[7] while the income score refers to the proportion of the population in an area experiencing deprivation related to low income.[8] Education and income score are calculated at the OA level and, originally, they are between 0 and 1, with an higher index indicating more deprived areas. We transform these variables by multiplying them by -1, so that a lower index is associated with more deprivation. Table 1 reports descriptive statistics of these two scores. From the table it emerges how in our sample there is a higher variation in the education

[7]It is based on a series of indicators like, for instance, the proportion of adults aged 25-54 with no or low qualifications or the proportion of young people not staying on in school or non-advanced education above age 16.

[8]It is based on a series of indicators such as adults and children in Income Support families or adults and children in Income-Based Jobseeker's Allowance families.

score rather than the income score. As it could be expected, the correlation between the two scores is rather high, at 0.84. [9]. In the econometric analysis we discretize income and education scores splitting the distribution in three groups, group 1 (Low) up to the first quartile, group 2 (Medium) between the first and third quartile, and group 3 (High) above the third quartile.

Finally, the variable *Homogeneity* is the Herfindahl-Hirschman Index of concentration of different ethnicities in an OA. It is computed as the sum of squares of the percentage of seven different groups: White British, Other White, Black, Pakistani, Indian, Other Asian and Other ethnic groups. Note that White British represents on average 87% (median: 90%) of the population in the areas affected by the universal metering programme, with Pakistanis, Indians, and Black people representing the most relevant minorities. Accordingly, a low level of homogeneity is indicative of a higher presence of these ethnic groups in an OA.

# 5 Results

Recall that the probability of adopting the changeover tariff in the full model is defined as:

$$\pi_i^s(\mathbf{x}_i, g_i; \boldsymbol{\beta}, \boldsymbol{\gamma}, \sigma) = \pi_i^a(\mathbf{x}_i) \cdot \pi_i^{s|a}(\mathbf{x}_i, g_i)$$

where, conditional on individuals paying attention, the term $\pi_i^{s|a}(\mathbf{x}_i, g_i)$ reflects the comparison between the gains from switching and the latent switching costs. In the restricted model, all individuals are assumed to pay attention with probability 1, so the probability of switching depends only on comparing gains and switching costs.

To better gauge the importance of modeling the attention stage, Table 2 presents the average estimated values of the probability of switching for the restricted and the full model. Because the full model explains a large share of non-switching by inattention, attentive individuals have a much higher probability to switch than in the restricted model (58.1% vs. 28.0%). This large difference in the probability of switching implies vastly different estimated switching costs, as shown in Figure 7. The restricted model estimates median switching costs at £481.52 which seems unrealistically high, considering the low effort required to adopt the changeover tariff. The full model estimates this cost at a much more reasonable figure of £88.80. Furthermore, Figure 7 shows that, in the restricted model, all households are found to have switching costs well above £200, with estimates of up to £800 for some of them, thus confirming that switching costs have to be unreasonably large to explain the low switching rates we observe.

We now look at the effects of individual characteristics and socio-economic indicators at OA level on the probability of adopting the changeover tariff. Table 3 shows the results for the restricted model

[9] As a term of comparison, for England as a whole, the equivalent measure of the scores are rather similar, at -0.22 (median -0.16) for the education score and -0.15 (median -0.11) for the income score

Table 2: Probability of Switching

| Probability | Restricted Model | Full Model |
|---|---|---|
| Switching $\pi_i^s(\mathbf{x}_i, g_i; \boldsymbol{\beta}, \boldsymbol{\gamma}, \sigma)$ | 0.2803 | 0.2817 |
| Attention $\pi_i^a(\mathbf{x}_i)$ | 1.0000 | 0.4867 |
| Switching if attentive $\pi_i^{s\|a}(\mathbf{x}_i, g_i)$ | 0.2803 | 0.5807 |

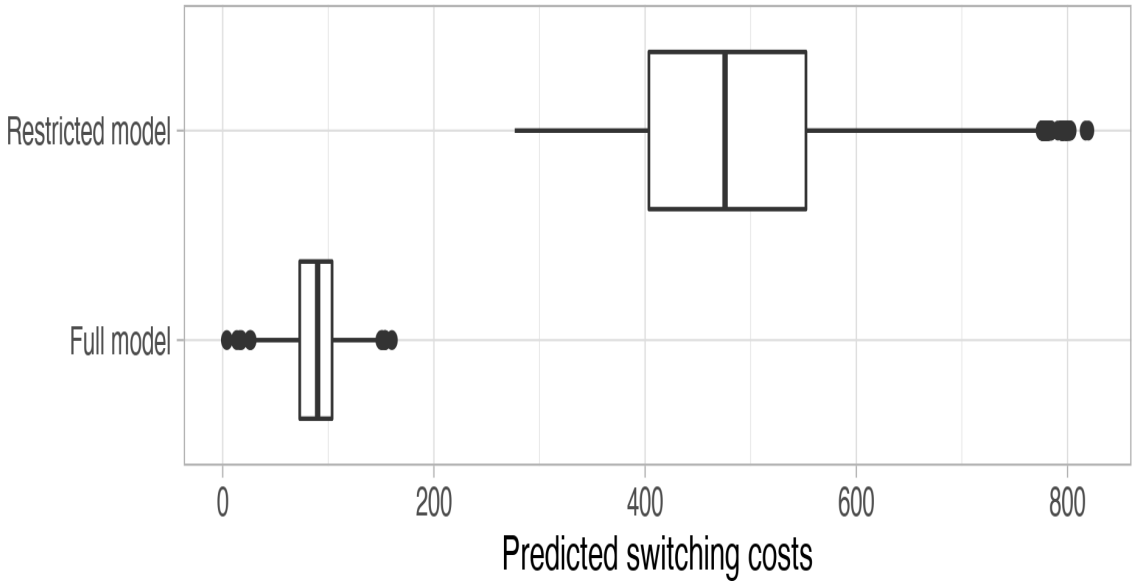



Figure 7: Distribution of switching costs

in column (1) and the full model in column (2). Recall that the coefficients on the variables in the top part of the table can be interpreted in terms of pounds sterling. The magnitude of the coefficients for the attention stage in the bottom part of the table do not have a direct economic interpretation. Therefore, in Table 4 we report the implied average partial effects (in percentage points) of the households' characteristics on the overall switching probability as well as the probability to pay attention and the probability to switch given attention.

A number of interesting results emerge from these two tables. First, the unmetered bill does not have any significant effect on the probability of switching and it has a small negative impact on the probability of paying attention. Given that the unmetered bill is the only financial information available to customers before they receive the 3M, customers with higher bills may anticipate that they have more to gain by adopting the changeover tariff and, therefore, pay more attention. The fact that the probability of paying attention does not increase for higher values of the unmetered bill provides support to our identifying assumption of not including gains in the attention stage.

Second, both models show that an increase in the number of occupants is associated with a reduction

in switching costs, a result that can be explained by the fact that there may be some specialization and division of tasks within large households. However, the restricted model produces estimates of the switching costs that are five to ten times higher than those delivered by the full model. This is due to the fact that, since households with four or more occupants are found to exercise more attention, differences in the switching rates between small and large households do not need to be explained by extremely large difference in switching costs, as in the restricted model. This increase in attention may due to the fact that in households with more people, it may be enough that just one of them decides to read the documents received and notices the potential savings.

Third, the restricted model suggests that switching costs decrease linearly as we move from areas with low to areas with high education scores. However, the full model makes clear that higher attention (and not lower switching costs) is what drives the higher probability of switching of areas with higher education. More precisely, Table 4 shows that, compared to households in low education neighborhoods with identical other characteristics, households in high education neighborhoods are more likely to pay attention by 5.24 percentage points. On the other hand, their switching costs are higher, so they are less likely to switch *if they pay attention* by 2.07 points. The overall switching probability is higher by 2.03 percentage points.

Fourth, the restricted model suggests that, compared to the reference group of low income areas, switching costs of households living in medium and high income areas are respectively, lower and higher. Once again a more accurate picture is obtained by looking at the full model. Households in both medium and high income areas have higher switching costs, possibly due to the fact that they have an higher opportunity cost of time. Moreover, Table 4 shows that households in high income areas are less likely both to pay attention and, conditional on paying attention, to switch whereas households in medium income areas are more likely to pay attention but, conditional on paying attention, less likely to switch.

Table 3: Attention and Switching Costs

| | Restricted Model | | Full Model | |
|---|---|---|---|---|
| switching costs: | | | | |
| Intercept | 700.59 | (17.69)*** | 94.40 | (9.12)*** |
| unmetered bill | 0.07 | (0.05) | −0.07 | (0.03)* |
| 1 occupant | 86.35 | (23.45)*** | 12.27 | (12.55) |
| 3 occupants | −97.73 | (9.32)*** | −15.44 | (5.03)** |
| 4 occupants | −194.17 | (11.00)*** | −24.10 | (5.93)*** |
| 5+ occupants | −196.24 | (12.59)*** | −16.57 | (6.67)* |
| age 35–65 | −77.59 | (10.91)*** | −6.44 | (6.02) |
| age >65 | −36.28 | (13.21)** | −19.17 | (7.34)** |
| education medium | −18.07 | (8.05)* | 3.77 | (4.41) |
| education high | −28.07 | (10.79)** | 7.89 | (5.65) |
| income medium | −20.05 | (8.21)* | 11.76 | (4.58)* |
| income high | 43.69 | (15.55)** | 7.98 | (8.34) |
| homogeneity high | −42.16 | (7.69)*** | 7.47 | (3.93) |
| direct debit | −64.14 | (6.92)*** | 30.40 | (3.92)*** |
| standard dev. $\sigma$ | 551.48 | (9.04)*** | 105.92 | (3.57)*** |
| attention probability: | | | | |
| Intercept | | | −0.49 | (0.06)*** |
| unmetered bill | | | −0.00 | (0.00)* |
| 1 occupant | | | −0.10 | (0.10) |
| 3 occupants | | | 0.04 | (0.04) |
| 4 occupants | | | 0.10 | (0.04)** |
| 5+ occupants | | | 0.19 | (0.04)*** |
| age 35–65 | | | 0.17 | (0.04)*** |
| age >65 | | | 0.04 | (0.05) |
| education medium | | | 0.08 | (0.03)** |
| education high | | | 0.13 | (0.04)*** |
| income medium | | | 0.12 | (0.03)*** |
| income high | | | −0.05 | (0.05) |
| homogeneity high | | | 0.14 | (0.03)*** |
| direct debit | | | 0.33 | (0.03)*** |
| Log likelihood | −28243.33 | | −27314.08 | |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 4: Probability of Switching and Paying Attention

| | Pr(switching) | Pr(attention) | Pr(switching\|attention) |
|---|---|---|---|
| Average prob. | 28.17 | 48.67 | 58.07 |
| unmetered bill | 0.00 | -0.02 | 0.02 |
| 1 occupant | -3.57 | -4.01 | -3.24 |
| 3 occupants | 2.93 | 1.73 | 4.11 |
| 4 occupants | 5.47 | 4.07 | 6.42 |
| 5+ occupants | 6.35 | 7.25 | 4.42 |
| age 35–65 | 4.43 | 6.42 | 1.68 |
| age >65 | 3.17 | 1.60 | 5.02 |
| education medium | 1.40 | 3.19 | -0.99 |
| education high | 2.03 | 5.24 | -2.07 |
| income medium | 1.18 | 4.54 | -3.09 |
| income high | -2.00 | -1.80 | -2.09 |
| homogeneity high | 2.07 | 5.27 | -1.96 |
| direct debit | 3.69 | 12.93 | -8.01 |

Looking at the effect of age on the decision to switch, the restricted model estimates switching costs for contract holders in their prime age (between 35 and 65 years old) and those above 65 to be £78 and £36 lower than contract holders below 35 (the reference group), respectively. Interestingly, in the full model, we observe that only the seniors still have lower switching cost while the prime age group is characterized by a higher probability of paying attention than the reference group. In other words, a higher switching rate among prime age group is not due to lower switching costs (as suggested by the restricted model) but to the fact that households in this group are more likely to pay attention by 6.42 percentage points.

The effects of racial homogeneity is particularly noteworthy. The restricted model suggests that switching costs decreases as we move from areas with a higher presence of minorities to areas with mainly white caucasians. However, the full model shows that the higher switching rate in areas with high concentration of white caucasians are driven by higher level of attention (5.27 percentage points) while, conditional on paying attention, the probability of switching is actually lower. This could be due to the fact that in the context we study a higher concentration of white caucasians implies more homogeneity and this could foster social interaction and "word of mouth" diffusion of information triggering a higher alert among households affected (e.g., neighbors mentioning the savings they realized due to the alternative tariff).

Finally, the results for direct debit are quite strong. The full model shows that households with direct debit are more likely to pay attention to the information but, conditional on paying attention, they are found to have switching costs of £30 more. As discussed in Section 4, households may

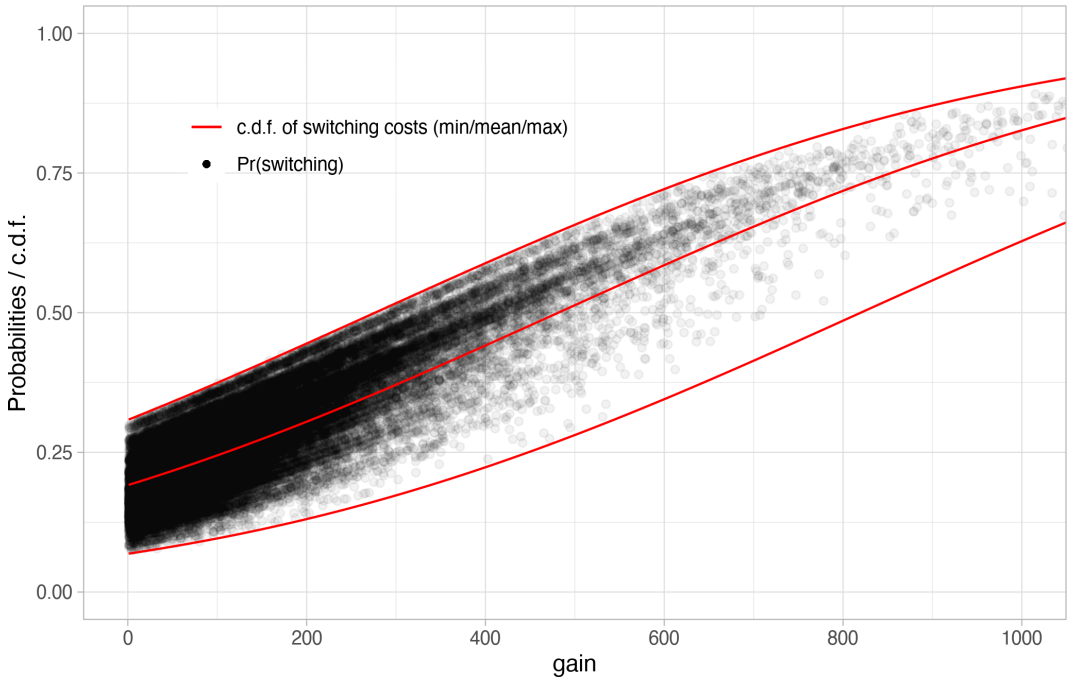



Figure 8: Restricted model: switching probabilities and costs

use direct debit if they have a strong distaste for dealing with paperwork which could also explain the higher switching costs. We did not have strong *a priori* expectations about the differences in attention. Our results show that households with direct debit are more likely to pay attention. A possible explanation is that direct debit is correlated with households characteristics, such as financial literacy or education (that in our specification we control only at the neighbourhood level).

To provide some intuition on the model mechanics and results, Figure 8 plots switching gains against estimated switching probabilities for the restricted model without the attention stage, while Figure 9 depicts the relevant aspects of the full model. In both cases, the black points represent the estimated switching probabilities. In the restricted model switching costs are the only explanation of inaction. Therefore, the estimated switching cost distributions depicted by the red lines are very high. The minimum and maximum distributions refer to the households with the highest and the lowest predicted switching costs. For the average household (in terms of the switching costs explained by the regressors), median switching costs are almost £500.

In the full model (Figure 9), the estimated switching probabilities are not forced to converge to 1 as gains go to infinity. Instead, they are allowed to converge to different values which are then interpreted as the attention probabilities. As noted before, attention probabilities are slightly below 0.5 on average, but they vary quite a bit depending on the values of the explanatory variables, as depicted by the dashed green lines. The switching costs, shown in blue, are identified from the

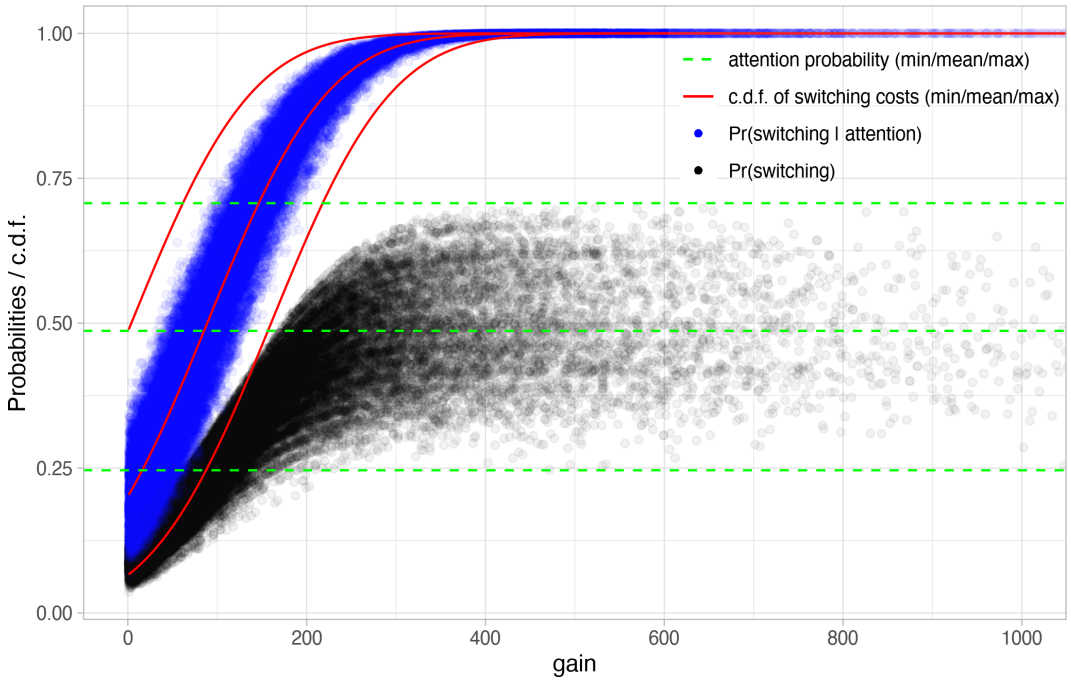



Figure 9: Full model: attention probabilities, switching probabilities, and costs

switching probabilities *conditional on attention*. The cdfs of the minimum, maximum and mean switching costs are shown in red. They are much lower that in the restricted model since the low switching rates even at high gains don't have to be explained by switching costs.

## 6 Conclusion

This paper shows how consumers fail to choose the most convenient between two water tariffs, in a setting where they should be very salient and where other mechanisms that have been proposed in the literature to explain inertia, like status quo as reference point or "sticking with what you know", do not play a role. We disentangle the role of inattention and switching costs, showing how the former plays a central role, and explore heterogeneity along dimensions like income and education.

Our findings have important policy implication. Consumer choice is a centrepiece of current market regulation policies promoting an increase in competition among suppliers. For instance, to control energy costs, the recently adopted EU energy policy framework Clean Energy for All Europeans [10] requires energy suppliers to provide free access to at least one energy comparison tool and clearer information in household bills. As underlined in the literature (Waterson, 2003), the impact of such measures is greatly diminished if consumers display a high degree of passivity, as documented in

[10] `https://ec.europa.eu/energy/topics/energy-strategy/clean-energy-all-europeans_en#energy-efficiency`

this paper. Our finding that low income/low education is associated with lower responsiveness also raises distributional issues, as people from low socio-economic background appear to be the least likely to benefit from increased choice.

The British energy regulator, Ofgem, has launched a program to address low levels of consumer engagement [11], testing measures "to encourage consumer engagement, promote competition and innovation in the retail energy market". These measures include a so-called *Cheaper Market Offer Communication*, contacting customers with better tariff offers by post, or *Collective Switch*, where, similarly to our setting, customers on a default energy tariff received letters showing personalised savings if they switched from their current deal to an exclusive tariff. All these measures can be effective, but, crucially, require consumers to pay attention, something that, as we show, cannot be taken for granted. It would therefore be important for regulators to add to their toolbox measures aimed directly at increasing attention. For instance, there is a literature showing the importance of word-of-mouth communications, where information is conveyed through personal networks (see, for instance, (Duflo and Saez, 2003; Banerjee et al., 2013)). There could be incentives to encourage engaged consumers to reach out to disengaged ones, along the lines of incentives provided by firms looking for employees ((Burks et al., 2015)) or in marketing ((Aral and Walker, 2011; Bapna and Umyarov, 2015; Wolters et al., 2020)). This would have the advantage of leveraging on trust and direct experience by peers, and could be a promising venue to boost attention. Alternatively, in some contexts, individuals could be forced to make an active choice (see Heiss et al., 2021).

In contexts in which it is not feasible to reach 100% attention, there is room for policy initiatives aimed at protecting consumers with low propensity to pay attention to tariffs and switch to the most convenient ones. An example of such a policy is the UK Domestic Gas and Electricity (Tariff Cap) Act that requires the energy regulator to design and implement a temporary cap on standard variable tariffs and fixed term default tariffs, entered into force on 1 January 2019 until 2023. As explained in Ofgem website [12] "[t]hese tariffs are an energy supplier's basic offer, and tend to apply if you haven't shopped around for a better deal. They are typically poorer value and more expensive than a non-default, fixed-term contract deal, which you can choose to switch to. You will often need to renew fixed-term contracts after a year or more. If you have never switched, or not switched for a long time, you are likely to be on one of these tariffs. Over half of all households in Great Britain are on these tariffs because they have never switched or have not done so recently."

As suggested by our finding of massive inattention in an environment that should be favourable to consumers taking action, a policy package should not take consumers' attention for granted. There are design choices and specific measures that can raise awareness, therefore limiting the impact of

[11] https://www.ofgem.gov.uk/consumers/household-gas-and-electricity-guide/how-switch-energy-supplier-and-shop-better-deal/prompting-engagement-energy-tariff-choices

[12] https://www.ofgem.gov.uk/energy-price-caps/about-energy-price-cap

inattention. Nevertheless, due consideration should be given to the fact that, even after deploying such measures, a non negligible share of the public may still not pay attention, therefore calling for measures aimed at passive consumers. This is particularly important if, as we show, the most vulnerable part of the population is the most prone to passivity.

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# Appendix

# Our 'changeover' period

We want to help our customers adjust to paying for the water they use once they have been converted to metered billing.

Based on the information you will receive at around 6 months after installation explaining how much water you have used, and you think your bill is going to be higher when you start receiving your metered bill, we can help ease you in to your new bill with our 'changeover' period.

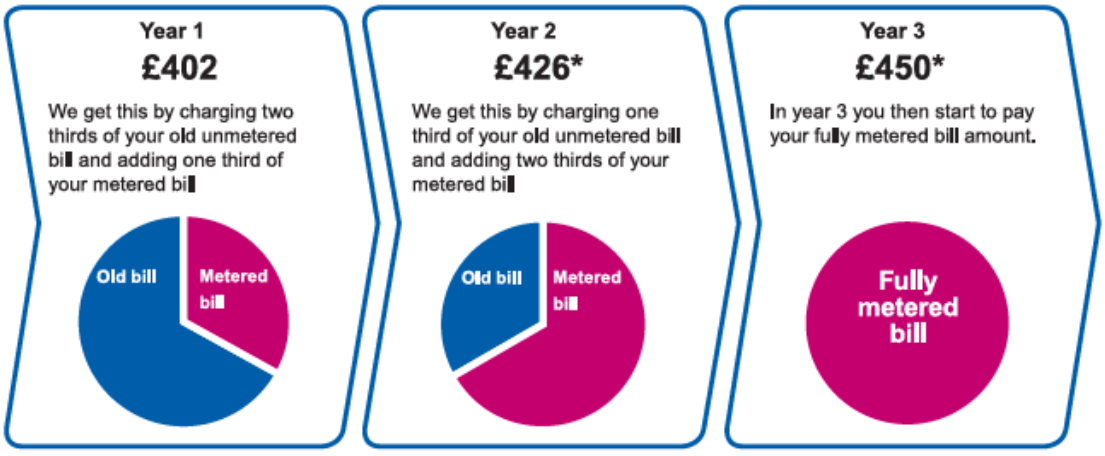
This means that if your metered bill is higher than your old bill, we will reduce your bills for the first two years – and you do not have to pay us back the difference at the end. See how it works below.

You can only opt onto our 'changeover' period once your meter charges have started.

If you have any questions about our 'changeover' period, then you can contact our Customer Contact Centre on 0333 2003 014.

# How it works

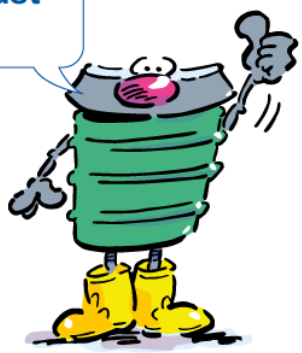
As an example, assuming that your current rateable value bill is £378 and your fully metered bill would be £450, then if you keep using the same amount of water, instead of £450 per year you pay:




*Example based on year 1 prices

Southern Water

We're helping you adjust to metered billing



MR A SAMPLE
7 SAMPLE ROAD
SAMPLEVILLE
SA10 1EL

13 October 2011

# It's been three months since we turned on your water meter

With a meter you pay for the water you use, it's a fairer way to charge.

## Your water usage

| Your meter readings | | |
|---|---|---|
| Meter reading when we turned on your meter | 10 May 2011 | 1 |
| Meter reading after three months | 10 October 2011 | 44 |
| **Total volume of water used (1m³ = 1,000 litres)** | | **43m³** |

Since we turned on your meter, the average daily water usage for your household = 305 litres. The average person uses 150 litres a day.

## Your first metered bill will be in three months time

- Your first half-yearly metered bill will be around £173 (if you keep using the same amount of water).
- Your total spend for the year will be around £346.
- If you were still getting your old bill it would be £204 for the year.

## Trouble paying? Can you afford it?

Will you find it hard to pay this? If the answer is yes, go to **www.southernwater.co.uk** or call **0333 200 3011** for advice about saving water and reducing your water and energy bills.

If you still think you can't reduce the amount of water you use by much and are unable to pay, please turn over for more details on how we can help you adjust to your new bill amount with our 'changeover' tariff.

Turn over for more details ➤

**Customer number:**
**01234567**

**Meter payment reference number:**
0123 4567 89101

### About your new meter

**You can find your meter:**
outside your property

**Serial number:**
SWNUMBE0123456

**Supply address**

7 SAMPLE ROAD
SAMPLEVILLE, SA10 1EL

**Any questions about your new meter, your account, or your payments?**

Just call **0333 200 3011**

**Opening hours**
8am - 7:30pm Monday to Friday
8am - 1pm on Saturdays

*Or go to*

**www.southernwater.co.uk**
and click on 'contact us'

Southern Water, PO Box 41,
Worthing BN13 3NZ

Southern Water Services Limited,
Registered Office – Southern House,
Yeoman Road, Worthing BN13 3NX

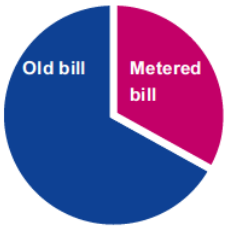
Registered in England No. 2366670


## Changeover tariff

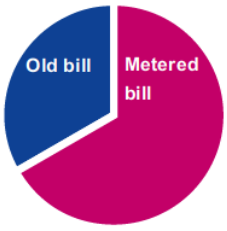
On our 'changeover' tariff, if your metered bill is higher than your old bill, we will **reduce** your bills for the first two years – and you don't have to pay us back the difference at the end! This is to help you adjust to paying for your water now that you are paying for the amount you use.

If you keep using the same amount of water, instead of £346 per year your total bill could be:

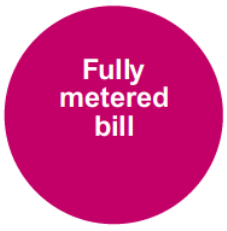
**Year 1**
**£251**
We get this by charging two thirds of your old unmetered bill and adding one third of your metered bill




**Year 2**
**£298***
We get this by charging one third of your old unmetered bill and adding two thirds of your metered bill




**Year 3**
**£346***
In year 3 you then start to pay your fully metered bill amount




***Example based on year 1 prices**

Opting in to the changeover tariff is easy, just call us on **0333 200 3011**

## Payment Options

Why not pay by Direct Debit? You can pay in full, or by monthly instalments. To set up a Direct Debit please visit our website www.southernwater.co.uk or you can telephone our 24 hour automated service on **0845 270 1508**.

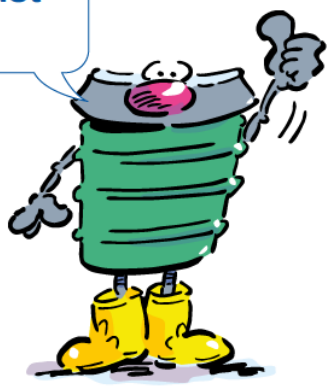
If you have any questions, just give us a call.

Kim Salmon, Director of Customer Services & Revenue

To help you adjust to metered bills for the first two years just call us on **0333 200 3011**

Southern Water

**We're helping you adjust to metered billing**



ADDRESS HERE

18 June 2012

# It's been six months since we turned on your water meter

With a meter you pay for the water you use, it's a fairer way to charge.

## Your water usage

| | | |
|---|---|---|
| Meter reading when we turned on your meter | 14 Nov 2011 | 45 |
| Meter reading after three months | 23 Feb 2012 | 94 |
| Meter reading after six months | 31 May 2012 | 138 |
| **Total volume of water used (1m³ = 1,000 litres)** | | **93m³** |

Since we turned on your meter, the average daily water usage for your household = 465 litres.

## We enclose your first half-yearly bill for this period of £307.30*

*This amount excludes any transfers, adjustments and payments.

If you keep using the same amount of water your spend for the year will be around £561.

To help you compare, if you were still getting your old bill it would be £385 for the year.

## Trouble paying? Can you afford it?

Will you find it hard to pay this? If the answer is yes, go to **www.southernwater.co.uk** or call **0333 200 3012** for advice about saving water and reducing your water and energy bills.

If you still think you can't reduce the amount of water you use by much and are unable to pay, please turn over for more details on how we can help you adjust to your new bill amount with our 'changeover' tariff.

Turn over for more details ➤

**Customer number:**
NUMBER HERE

**Meter payment reference number:**
NUMBER HERE

### About your new meter

**You can find your meter:**
outside your property

**Serial number:**
NUMBER HERE

**Supply address**
ADDRESS HERE

**Any questions about your new meter, your account, or your payments?**

Just call
**0333 200 3012**

**Opening hours**
8am - 8pm Monday to Friday
8am - 5pm on Saturdays

*Or go to*

**www.southernwater.co.uk/metering**

BILL_N 996 IC UMP 3011 855.3.1



Southern Water, PO Box 41,
Worthing BN13 3NZ

Southern Water Services Limited,
Registered Office – Southern House,
Yeoman Road, Worthing BN13 3NX

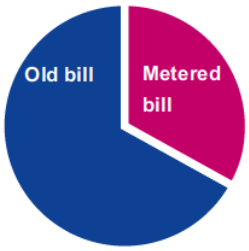
Registered in England No. 2366670


## Changeover tariff

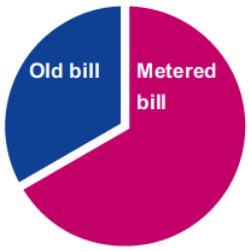
On our 'changeover' tariff, when your metered bill is higher than your old bill, we reduce your bills for the first two years – and you don't have to pay us back the difference at the end! This is to help you adjust to paying for your water now that you are paying for the amount you use.

If you keep using the same amount of water, instead of £561 per year your total bill could be:

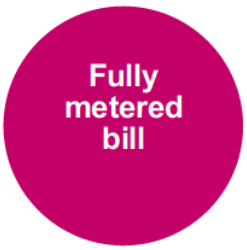
**Year 1**
**£443**
We get this by charging two thirds of your old unmetered bill and adding one third of your metered bill




**Year 2**
**£502***
We get this by charging one third of your old unmetered bill and adding two thirds of your metered bill




**Year 3**
**£561***
In year 3 you then start to pay your fully metered bill amount




***Example based on year 1 prices**

The charge for this period of £307.30 is your fully metered charge. If you want to go on our changeover tariff just call 0333 200 3012 and we'll send you a revised bill.

If you don't contact us you will stay on the standard metered tariff.

## Your Direct Debit plan

As you pay your water bills by Direct Debit, we will continue to take payments from your account. If you go on our changeover tariff, your Direct Debit payment amounts will be reduced accordingly.

If you have any questions, just give us a call.

Kim Salmon, Director of Customer Services & Revenue



To help you adjust to metered bills for the first two years just call us on **0333 200 3012**

Southern Water

Have you read my top 10 tips at www.southernwater.co.uk?

Customer Number:
NUMBER HERE

Payment reference number:
0004 0423 15516

Bill Date:
18 June 2012

Supply address:
ADDRESS HERE

ADDRESS HERE



# Your metered statement

**For 14 November 2011 to 31 May 2012**

| Your account summary | £ |
|---|---|
| Your last bill | 0.00 |
| Transfers | 67.54 cr |
| What you paid | 219.03 cr |
| **Your balance before this bill** | **286.57 cr** |

| Charges this period | £ |
|---|---|
| Metered water and sewerage charges | 307.30 |
| See page 2 for full details ➤ | |
| **Total** | **£20.73** |

For information only. Payment is by Direct Debit.
This is your first metered bill. For your first four metered bills, when your metered amount is higher than your old bill, you can go on our 'changeover' tariff - call 0333 200 3012 to go on this tariff.
Please note your new payment reference.

## Managing your water

### How do you compare?

This period you've used an average of **465 litres** of water per day. Have a look at this table to see how efficient your water usage is based on the size of your household.

**Efficient total daily water use (litres)**

| | | |
|---|---|---|
| 1 person | Flat | 173 |
| | House/garden | 188 |
| 2 people | Flat | 304 |
| | House/garden | 319 |
| 3 people | Flat | 373 |
| | House/garden | 388 |
| 4 people | Flat | 418 |
| | House/garden | 433 |
| 5 people | Flat | 489 |
| | House/garden | 504 |
| 6 people | Flat | 577 |
| | House/garden | 592 |

***Your usage is the same as an efficient five person household without a garden***

BILL_N 996 IC UMP 3013 855.3.2

## How to pay your bill

**Direct Debit** – please fill out the enclosed form if you prefer to pay by Direct Debit or visit our website **www.southernwater.co.uk**

**Debit and credit cards** – Pay online at **www.southernwater.co.uk** or you can ring our automated line on **0845 270 1508** (available 24 hours a day)

**Home or telephone banking** – please quote your payment reference number. Our bank sort code is 57 70 63 and our bank account number is 00000000.

**Payment card** – ring our 24 hour automated service on **0845 270 1508** to apply for a payment card. This can be used at all Post Offices and Paypoint outlets. We can offer weekly, fortnightly or monthly payment options to help you budget.

**PayPoint** – cash payments can be made anywhere you see the PayPoint sign. Please take your bill or your payment card with you.

**At the bank or Post Office** – payments can be made at most banks or post office branches using the payment slip provided. This service is free of charge if paid at the post office, any branch of your own bank or at a NatWest bank (excludes Santander and Halifax)

**By post** – complete and tear off the payment slip and send it with your cheque made payable to Southern Water at PO Box 41, Worthing, West Sussex BN13 3NZ. Please note, we do not issue receipts for cheques or postal orders unless you send us the bill.



! If Southern Water has registered a Default on your Consumer Credit File, the charges from this bill will be added to the total default amount outstanding. Southern Water will have sent you previous correspondence to advise you of our default process.

## Your new metered bill calculation

**Water usage for meter number 8127564**

1 cubic metre = 1000 litres = 220 gallons

| | | | |
|---|---|---|---|
| Previous read | 14 Nov 11 | 45.0 | |
| Year end read | 31 Mar 12 | 111.0 | = 66.0 m³ |
| Current read | 31 May 12 | 138.0 | = 27.0 m³ |
| Total volume of water used | | | = 93.0 m³ |
| Volume of water returned to sewer (92.5% of total water used) | | | = 86.03 m³ |

## Charges for this period

| | |
|---|---|
| **Water Supply** | |
| 14/11/2011 to 31/03/2012 66 m³ X 104.00p = | £68.64 |
| 01/04/2012 to 31/05/2012 27 m³ X 113.40p = | £30.62 |
| 14/11/2011 to 31/03/2012 Standing charge | £10.01 |
| 01/04/2012 to 31/05/2012 Standing charge | £4.41 |
| **Sewerage** | |
| 14/11/2011 to 31/03/2012 61.05 m³ X 187.70p = | £114.59 |
| 01/04/2012 to 31/05/2012 24.98 m³ X 208.00p = | £51.96 |
| 14/11/2011 to 31/03/2012 Standing charge | £6.90 |
| 01/04/2012 to 31/05/2012 Standing charge | £3.04 |
| **Surface Water Drainage** | |
| 14/11/2011 to 31/03/2012 Standing charge | £8.36 |
| 01/04/2012 to 31/05/2012 Standing charge | £3.68 |
| **Highway Drainage** | |
| 14/11/2011 to 31/03/2012 Standing charge | £3.42 |
| 01/04/2012 to 31/05/2012 Standing charge | £1.67 |
| **Total charges for this meter** | £307.30 |

### How to contact us

*Please quote your customer number.*

Visit our website at

**www.southernwater.co.uk/metering**

**24 hour automated line:** 0845 270 1508

To pay your bill, tell us you are moving, set up a Direct Debit or apply for a payment card

**Spotted a leak?** Call 0800 820 999 (24 hr freephone)

**Water supply or sewerage problem?**

Call 0845 278 0845 open 24 hrs for emergencies otherwise Mon - Fri 8am - 7pm, Sat 9am - 1pm

**Questions about your bill?** Call 0333 200 3012 Mon - Fri 8am - 8pm, Sat 8am - 5pm

**Use a text phone?** Call 0845 275 0845 (Mon - Fri 8am - 8pm, Sat 8am - 5pm)

**Write to us at** PO Box 41, Worthing BN13 3NZ

Or fax us on 01903 535 060

**You must give us at least 2 days notice if you are moving**

An independent body, the **Consumer Council for Water** (CC Water) represents the interests of all water customers in London and the South East of England. For advice call 020 7931 8502 or email: londonandsoutheast@ccwater.org.uk, or write to: CC Water, London & South East, C/o 1st Floor, Victoria Square House, Victoria Square,

### How do you workout my charges?

With a water meter, you are charged for the amount of water you use. You are also charged for the water returned to the sewerage system, which is treated and recycled to the environment. However some water is used in the garden and evaporates, so we work out bills on the basis that a percentage of water supplied goes into the sewers.

### What are standing charges?

There are certain costs that we incur regardless of how much our customer use our services. These include for example, the cost of sending bills, collecting payments and answering enquiries. The standing charges that we make cover these costs.

### What is surface water drainage?

Surface water is rainwater run off from your roof and other paved areas. A charge is made for this where it runs into the public sewer. However, if none of the rainwater from your property goes into the public sewer, you can claim a rebate by ringing **0845 279 0845**, or by visiting our website at **www.southernwater.co.uk** Please note that the rebate can only be applied to the beginning of the current billing year (beginning of April)

### What is highway drainage?

Rainwater from our highways drains into the public sewers and then becomes our responsibility. Properties connected to the public sewer are liable for the highway drainage charge.

Southern Water



### Clean Up on Washing up and Water Savings

The Elia family uses lots of water for washing up and they wanted to make changes before their water meter arrived. Mum-of-three Mary used to wash up in the kitchen sink under a tap running at 15 litres per minute. With the tap running for about half an hour each day, the family was using 450 litres each day, adding up to £440 each year! Now, Mary just fills up her dishwasher once a day – saving hundreds of litres of water and more than £100 each year. Mary said: "I never used to worry about how much water I used but now we are all turning off the tap and using the full dishwasher."

****Every litre of water you save each day is roughly equivalent to saving £1 off your annual bill.**

### How to contact us

*Please quote your customer number.*
Visit our website at
**www.southernwater.co.uk/metering**
**24 hour automated line:** 0845 270 1508
To pay your bill, tell us you are moving, set up a Direct Debit or apply for a payment card
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# Did you know?

The average person in Britain uses 150 litres of water every day and a lot of that water is wasted. By making a few simple changes to your daily life, you can save water, save energy and, in turn, save money.

### Water saving tips for the garden

Water your plants early in the morning and late afternoon when it is coolest and evaporation rates are lower.

Use a bucket and sponge to wash your car and use a tenth of the water you would use compared to washing with a hosepipe.

Your roof collects enough water to fill about 450 water butts every year. You can use this for your garden, house plants and washing your car.

# Water saving tips

Every minute you cut off your daily shower saves around £15 on the household water and energy bill over the year.

Fix dripping taps. A dripping tap can waste up to 15 litres of water a day, or almost 5,500 litres per year. Replace worn washers for a quick and cheap way of saving up to £20 on your water bill over the year.

By washing up in a bowl as opposed to under a running tap, you could save around £26 a year off your water bill, £40 a year if you have electric heating or £25 off your gas bill.

A sprinkler can use as much water in one hour as a family of four in a whole day so swap your sprinkler for a watering can.


Southern Water Services Ltd. Registered Office:
Southern House, Yeoman Road, Worthing BN13 3NX.
Registered in England No. 2366670.
Vat registration number: 813 0378 56

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