CONSUMERS’ BEHAVIOUR AND ENERGY REGULATION IN EUROPE*

1. Introduction

The outcomes of energy markets liberalization in Europe, that started nearly fifteen years ago, look pretty mixed, not only at a geographic level. Despite major achievements, competition has developed more at wholesale than at retail scale and most consumers, including households and SMEs, hardly seem aware of, or effectively able to reap the benefits that competition can bring. In its “Energy 2020” communication (CEC, 2010a), the Commission acknowledges that (up to now)

“the internal energy market has not achieved its potential for transparency, accessibility and choice”.

One of the main issues, together with some enduring barriers to competition and excessive delays in investments, triggered by the ongoing economic crisis, is the limited engagement of consumers. Disappointing supplier switching rates, lack of investments in energy efficiency and limited interest in innovative services at domestic level are major obstacles to the ambitious EU targets in terms of economic development and environment protection.

The above sketched outcomes are no surprise considering the perception of European consumers with regard to the actual functioning of retail energy markets. The 6th Consumer Markets Scoreboard, an insightful Commission’s tool for identifying potentially underperforming sectors, ranked energy markets among the worst in Europe (CEC, 2011a). The document was mainly based on a large survey, held in 2011, assessing consumer opinions across all EU countries on 51 sectors, accounting for 60% of overall household budget. To show effectively and concisely the results of the survey,

* This paper does not necessarily reflect the views or policy of the Autorità per l’energia Elettrica ed il Gas.
the Commission designed a Market Performance Indicator (MPI), i.e. a composite index based on four, equally weighted, aspects of consumer experience: 1) the ease of comparing offers of goods or services; 2) consumers’ trust in retailers to comply with consumer protection rules; 3) the experience of problems and the degree to which they have led to complaints; 4) the overall satisfaction level of the final consumers.

Compared to other European retail markets, based on the MPI scale, electricity ranked 46th, natural gas 36th and fuels 33rd. Only financial services (investments, pensions, securities and mortgages) performed worse than energy services, while communication and transport services ranked at a slightly higher level. Furthermore, fuels and electricity experienced a deterioration in the MPI score compared to 2010, which may also reflect a reaction to increase in retail prices. Notwithstanding random or cyclical effects, consumers clearly deem the retail offers of energy services difficult to compare and insufficiently diversified. In particular about 24% and 18% of respondents, respectively, found electricity and gas offers hard to compare and exactly the same figures hold true with regard to consumers’ perceived level of trust in suppliers’ conduct. The survey highlighted also that in 2011 around 14% of retail users experienced ‘problems’ with their electricity suppliers, most often related to billing issues.¹

The MPI score gives evidence of a situation preventing consumers to engage actively in energy markets despite the size of potential benefits, estimated by EU Commission to the extent of € 100 per year, for electricity supply only, and to the extent of € 1,000 per year for energy efficiency improvements. Significant improvements are expected from technology developments, in particular from the diffusion of smart meters and other online tools to monitor energy consumption and compare retail offers. Economic incentives, either in the form of tax deductions or direct funding may have also strong effects, although recent experiences in Europe demonstrate that setting incentive levels, both stable over time and not oversized, remains a very difficult task for regulators. A ‘soft’ – and cheaper – but also powerful impulse is poised to come from the application of behavioural sciences insights into consumer policy.

Behavioural analyses highlight that the major barrier to consumers’ mobility is the low confidence in their ability to make

¹ About 81% of consumers experiencing problems complained with supplier, vs. 77% average rate for other services.
good choices, while for energy efficiency the main issue is the natural tendency to overvalue short term investment costs against long term benefits. In the light of these findings, it is noticeable that the European regulatory approach remains focused on formal information disclosure, ignoring real consumer behavior. The disappointing performance of energy markets could be well improved by the application of regulatory tools designed through a detailed analysis of consumer behavior and preferences. The point is how to embed such analyses in the ordinary decision making process and how to choose the most suitable tools to enhance consumers’ activity and benefits.

The European Commission has initially adopted a cautious stance on the matter while progressively adopting market surveys as a major input for policy actions for consumers’ protection. The same holds true for national regulators, as OFGEM in the UK, that, during a three-year long energy market review, highlighted a number of issues related to non-rational consumer behaviour (OFGEM, 2011). Retail market findings still have not translated into specific norms neither at European nor at national level with a few exceptions. Nevertheless, a number of strategic approaches have been proposed and discussed. Credited US experts argue that ‘small’ carefully designed measures, as for example providing information that is clear and differentiated among customers’ groups, putting alternative choices in a correct framework and designing smart default choices, can ‘nudge’ consumers towards welfare enhancing decisions.

A further step in the review of the decision-making process should be the achievement of a more flexible and participated decision-making process, through improved consultation and more accurate analyses of regulatory decisions impacts, in the light of behavioural insights. In this respect, for some experts there is room for enhancing the role of consumers’ organizations beyond complaints, involving them also in tariff regulation and incentives design process. An example comes again from the US, where FERC has endorsed a light approach to tariff regulation based on negotiated settlements, against the increasingly cumbersome EU approach. The European country in which consumers’ bodies are ever more increasing their institutional scope of activities is UK. In the US, the Obama administration has undertaken a comprehensive review of regulation, aimed at reducing unnecessary burdens and involving also individual customers in the process, via online tools. EU will probably follow a similar path when setting the objectives of consumers’ policy strategy and actions from 2014 onwards.
The following Section deals with major developments in Europe regarding consumers switching and energy efficiency, highlighting issues and innovative remedies. Section 3 runs through European consumers’ regulatory framework highlighting current weaknesses. Section 4 highlights some behavioural sciences findings from economy and psychology, as well as their influence on regulatory patterns. Tentative conclusions are sketched in Section 5.

2. Recent developments in energy markets

According to official figures, in 2011 only 13% of European electricity customers switched tariff plan or supplier vs. 11% in 2010, with big differences among countries. However, only half of these were ‘true’ switchers choosing a new supplier. The same situation applies to gas provision, with true switching rates in the range of 7%, calculated on statistics presently available. The situation is quite the same everywhere with the notable exception of a handful of countries like UK, Netherlands, Spain and Italy (CEC, 2010b). Not surprisingly, electricity and gas markets are perceived among marginal consumers as the most troublesome for switching. In the UK, probably the country with the highest switching rates in Europe both for gas and electricity, the regulator OFGEM has classified only 15%-20% of energy consumers as ‘active’, 20%-30% as ‘passive’ and at least 50% ‘disengaged’ or ‘permanently disengaged’, i.e. with no interest in switching the current energy supplier. The situation is reverted when considering enterprises, accounting for the majority of volumes sold in almost all the countries considered.

According to qualified estimates, potentially the benefits of an increased participation in the market could be substantial. In a comprehensive study commissioned by European Commission focusing on the functioning of the electricity market, it was calculated that EU consumers could save about € 13bn in total per year if

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2 According to a calculation made by Council of European Energy Regulators and based on national statistics.

3 In 2010 UK switching rate in term of customers was 15% in natural gas and 17% in electricity for domestic segments.

4 In Italy during 2011 switching rates, in terms of volumes sold, were 7% among domestic users and 27% among enterprises in electricity, and 9.2% domestic compared to 32% among enterprises in gas sector. Domestic sector accounted for 34% of volumes for electricity and about 20% for natural gas.
they all ideally switched to the cheapest provider locally available. Switchers didn’t found a tariff cheaper than the subscribed one in 62% of cases, losing an average saving of about € 100 per year. Anyway, only 32% of surveyed respondents had ever compared retail offers and almost half didn’t know how much electricity they consumed, which is an essential piece of information when deciding whether to switch the supplier (ECME, 2010). With regard to energy efficiency, EU Commission estimates that an average household could ‘easily’ save € 1,000 per year. Overall direct benefits only, supposing the EU 20% reduction objectives are met in 2020, have been estimated in € 220 bn per year (CEC, 2008).

Several factors support consumers inertia, independently from the available choice of suppliers and tariffs – where prices can be fixed or variable, differentiated in peak and off-peak rates, related to fixed term or unspecified duration contracts. The main factor is the difficult estimation of possible savings, mainly due to the complex structure of tariffs and bills. There are also non-observable features of the offer such as quality of supply or customer service, as well as contractual terms. Switching procedures are lengthy, taking several weeks versus the few days needed, for example, in telecommunications, also due to the absence of consumers databases shared among suppliers. Moreover, *ex post* guarantees are perceived as slow and not fully effective. Finally, in several countries of Southern and Eastern Europe regulated tariffs for power and gas domestic usage are operational that provide a strong protection to elderly, less educated, rural and low income customers, while certainly not stimulating their willingness to switch provider.

Consumers’ departure from perfectly rational behaviour, however, is not limited to excessive inertia or exclusively to less competitive markets. In UK, where retail markets are characterized by fierce competition and high customers mobility, among those consumers who opted for switching, half of switchers did not maximize savings, while 20% selected a less convenient offer, i.e. made a wrong choice (Wilson and Waddams Price, 2010). This is not surprising considering both the biases when estimating their own consumption (‘reversion to the average’) and the excessive expectations of economic gain (‘group rationality’). OFGEM, taking into account these findings, at the end of a thorough retail market review started in 2008, imposed to suppliers of electricity and gas an obligation to prevent them from unfair discrimination among consumers and also to provide a standard offer with an oversimplified structure easily comparable for all customers. This obligation elapsed at the end of July 2012 while
being actually under review. However, it’s unlikely that OFGEM will adopt a final decision before the mid of 2013.

The transparency of the offers and online tools are essential to get customers’ active participation in energy markets and can be managed either by regulators or by independent organizations, certified by regulators. The first model has been implemented in Italy and France, the second in Germany and the Netherlands. In the UK, a statutory consumer body, Consumer Focus, is in charge of the comparison among suppliers’ commercial offers and also of the credit online of comparison sites. This organization, founded by consumers, has the duty to intervene on complaints from vulnerable customers and holds strong powers, being entitled to: investigate and report systemic problems, gather information from energy suppliers, file complaints to sector regulators and collective redress requests, develop own research and analysis tools. Consumer Focus, backed by OFGEM, successfully engaged in lowering excessive debt repayment rates and disconnection procedures and, relying on its powers only, succeeded in obtaining a large redress from a group of gas suppliers that engaged in overcharging.

With regard to investments in energy efficiency, besides ‘hard’ issues such as the limited availability of financing and difficult agreements between landlords and tenants on benefits and costs sharing, a critical factor is the lack of specific skills and a limited ability to forecast the evolution of variables that are crucial for profitability analyses. To overcome these obstacles, the UK government launched an initiative, the “Green Deal”, relying on behavioural sciences insights. The programme strategy is based on four large-scale trials in collaboration with firms and other stakeholders, including offering rewards to individuals and groups and reducing the ‘hassle factors’, as for example the loft clearance when dealing with loft insulation. Other trials comprise social effects coming out from comparing consumption among people living in the same areas, by means of smart meters, and there is also a program trying to assess the impact of framing cost savings of energy efficiency improvements over different time horizons (1, 3 and 5 years). This is combined with a program of incentives for thermal renewables.

3. The European Approach to Consumer Protection

European consumer laws have been designed to protect and empower the ‘average’ customer as the weakest part of the contractual
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relation with suppliers of goods or services. The protective approach to consumers' affairs is rooted in article 169 of the Treaty on the Functioning of European Union (2010) and it's mainly justified by information asymmetry between consumers and traders. The current European legislative framework includes a directive on consumer rights (EU, 2011), merging four existing directives, and a specific directive on unfair commercial practices, providing relevant limitations to contractual freedom and aimed at safeguarding final consumers (EU, 2005). The approach is mainly based on pervasive obligations of information disclosure imposed on retail products or service providers. This is the result of the assumption, derived from the mainstream economic theory, that consumers are rational agents who, once provided with relevant information, are able to choose among given alternatives in order to maximize their own benefits.

The new European Consumer Agenda highlights that consumers' activity is much related to confidence in the proper functioning of markets, which in turns depends on the way they perceive knowledge, safety and enforceability of rights (CEC, 2012a). The sentiment of confidence is actually fragmented across the European continent but there seems to be room for substantial improvement. According to a Eurobarometer survey conducted at EU-27 level in April 2010, 55% of respondents felt 'protected' by consumer regulations, 63% felt 'knowledgeable' about consumers rights and 73% felt 'self-confident' as consumers (CEC, 2011b). The share of those who felt at the same time protected, knowledgeable and confident was only 44%, with an average two-thirds of respondents in Northern Europe, around 50% in Central Europe and much lower figures in Southern and Eastern Europe. Socio-demographic variables like age, education and income broadly influence the perceived level of confidence, with weakest individuals concentrated in lower bands and therefore less inclined to play an active role.

Against this background, there is a growing concern with field surveys and market developments rebutting the assumption of consumers' perfect rationality. The already mentioned Eurobarometer survey highlighted that a significant portion of respondents, at EU-27 level, goes in trouble making everyday calculations, understanding key information (including labels) or recognising unfair sales practices. Moreover a majority of consumers don't know or remember their basic rights, including the return, reparation or replacement of faulty products. Results are distributed, geographically and with regard to socio-demographic variables, similarly to those relating to questions on confidence. The report highlights also a strong positive correlation
between perceived confidence, knowledge and protection and actual consumers’ skills.

Findings of this kind are not surprising for psychologists and behavioural economists who focus on individual decision-making process. According to behavioural literature, people’s choice is systematically influenced by biases and heuristics, as well as by irrational expectations. As a consequence, providing consumers with an even wider range of information may prove useless to improve their ability to tackle issues like: high search costs, limited capacity to process information and estimation of future demand. On the contrary, an overload of complex information is likely to deter consumers from searching markets or may even push them towards shortcuts, leading to suboptimal or wrong choices worsening their previous situation. Evidence from UK, for example, is that one in five consumers switched energy supplier to pay more.

Despite growing evidence of its limits, formal information disclosure remains the main regulatory device for consumers’ protection in Europe. The recent directive on consumers’ rights, also, sets demanding information requirements on traders, both before the conclusion and during the performance of a contract, particularly if concluded at a distance or off-premises. Behavioural insights are explicitly taken into account only in article 22 by which, with reference to default options and the ‘signing-without-reading’ problem, sellers are required to obtain express consent by consumers for any extra payment, with reimbursement in case of non-compliance. Nevertheless, the European Commission showed an active interest in behavioural economics and the Consumer Agenda explicitly envisages, for the first time ever, a future integration in the European legal framework of relevant outcomes emerging from behavioural sciences.

National regulators are also increasingly aware that retail market functioning have to be improved. The Council of European Energy Regulators (CEER) has put consumers’ protection at the top of its agenda. Among the actions proposed in the framework of the initiative “Building a 2020 vision for Europe energy customers”, CEER has preliminarily identified four actions to focus on during 2013: 1) an analysis of the involvement of consumers’ organisations in the regulatory process; 2) a review of smart metering progresses

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5 For a review of some of the most common effects see Section 4.

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3) an analysis of key processes where customers and energy distribution operators interact; 4) a review of current practices in terms of customers access to information on the costs of energy. CEER approach explicitly points at a better understanding of consumers’ expectations and needs, also through the exchange of information about good (and bad) practices and collaboration with consumers’ associations.

Consumers’ empowerment is increasingly considered as a prerequisite for the success of any meaningful strategy aiming at enhancing consumers’ engagement. “Energy 2020” strategy identifies consumers’ empowerment as one of the five priorities of European energy policy and sets as primary goals the achievement of a better oversight on anticompetitive behaviour and of a strengthened public confidence in energy markets. Empowerment can be achieved, at an individual level, mainly through education, spreading the use of price comparison tools and by means of social networks as well as through imitation and shared efforts. Europe has developed a solid relationship with consumers’ organizations, acting as primary collectors of complaints and representatives of individual interests in disputes. The 3rd Energy regulatory package recognizes this role, requiring to formally involve an ombudsman or a recognized consumer body in the procedures, being held in front of the sector or competition regulator (EU, 2009).

The 2011 Eurobarometer survey on consumers’ perceived functioning of European legal protection framework showed that average levels of trust in public authorities and consumers’ organizations is high, at 62% and 72% respectively (CEC, 2012b). At the same time, consumers and retailers knowledge and understanding of their basic rights and obligations still remain fairly poor (13% of consumers and 27% of retailers), so confirming the need for better education. Energy regulators have pursued this goal so far with limited success. The reason is that the first phase of European consumers’ policy strategy, that lasted until 2006, focussed on consumers protection.

The main concern was consumers’ information asymmetry confronted with service providers. That approach heavily relied on

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7 Together with “achieving the highest level of safety and security” and along with four other strategy goals, namely: i) achieving an energy efficient Europe, ii) building pan-European energy markets, iii) extending Europe’s leadership in energy innovation, iv) strengthening international partnerships (CEC, 2010a).
massive information disclosure, ultimately giving room to a prevalence of legal formalism and to an excessive quantity of provisions, with the final result of marginal improvements of consumers’ decision ability. A consequence was that only skilled customers had the chance to benefit from competition. The current phase of European consumers’ policy strategy is centred on the enhancement of consumers’ empowerment but the actions undertaken so far have registered a limited success as the underlying tools are based on ‘accurate’ information disclosure obligations and special protection from risks and threats

“that cannot be left to individuals to deal with” (Risk & Policy Analysts, 2011).

This kind of approach, paternalistic and reactive in nature, is still based on the assumption of perfect rationality of consumers postulated by neoclassic economic theory. Behavioural sciences, highlighting systematic errors, question the capacity of such regulatory approach to best serve market needs.

The role of consumers’ organizations has grown over time in the field of consumer protection and some experts envisage the possibility that they could play a central role also on tariff design process, in the framework of a new approach based on settlements as a primary tool. Littechild (2012) considers that the process to set regulated tariffs currently implemented in the UK has become too cumbersome, opposed to negotiated settlements adopted in US (at federal level) and Canada. According to the author, the current process, based on price caps managed by NRAs, entails: 1) an increasing effort by the parties involved to lobby the regulator, often leading to litigations; 2) an ever more frequent specification and/or approval of quality of service standards or investment plans, with limited knowledge of real customer preferences; 3) an increasing lack of flexibility to national circumstances, due to EU pressure for regulatory uniformity. Hence there is the need for a new approach.

The above outcomes are not originated by the price cap in itself, but by the fact that regulators increasingly seek to ascertain in advance what kind of efficiency improvements and investments could take place in the regulated period, letting no space for negotiation to the parties involved. In this way regulators have gradually taken upon themselves the discovery and coordination process undertaken by a competitive market, although they have no better knowledge than market players. Littlechild advocates an active involvement of customers and users in negotiations with regulated utilities, including
small consumers’ representatives, in order to ease market discovery process and reduce its price. In the light of behavioural economics outcomes, the proposed approach questions the perfect rationality of the regulatory process in favour of a less formal – while more effective – scheme based on knowledge sharing and adaptation to changes in terms of demand and technology.

4. Assumptions and Consequences of Behavioural Economics on Regulation

Individuals commit systematic errors when making choices, i.e. they don’t maximize their benefit when buying goods or services and when facing simple investment decisions, contradicting conclusions of mainstream economic theory. Such general behavior, experimentally observed by a number of researchers, is now considered, rather than an exception, a proof of ‘bound’ rationality of human beings, opposite to the ‘perfect’ rationality postulated by neoclassical economists. This finding is hardly surprising in the real world, especially among marketing experts, but is due to overturn the theory of choice that stands at the foundation of microeconomics. The behavioral approach will hence play a central role in markets regulation, where there is an increasing need to make decisions more effective and, at the same time, less cumbersome.

According to 2002 Nobel laureate in economics sciences Daniel Kahneman, the cornerstone upon which behavioural economics has been developed can be identified in the whole set of the biases of intuition. The biases of intuition are due to the fact that human mind works using two different systems that Kahneman, adopting terms originally proposed by the psychologists Stanovic and West, defines System 1 (S1) and System 2 (S2):

“S1 operates automatically and quickly, with little or no effort and nonsense of voluntary control. S2 allocates attention to the effortful mental activities that demand it, including complex computations. The

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8 In the introduction of his latest book, *Thinking Fast and Slow*, Kahneman clarifies that “the focus on error does not denigrate human intelligence, any more than the attention to diseases in medical texts denies good health. Most of us are healthy most of the time, and most of our judgements and actions are appropriate most of the time. As we navigate our lives, we normally allow ourselves to be guided by impressions and feelings, and the confidence we have in our intuitive beliefs and preferences is usually justified. But not always” (Kahneman, 2011).
operations of S2 are often associated with the subjective experience of agency, choice and concentration” Kahneman (2011).

S1 runs automatically and continuously generates suggestions for S2. If endorsed by S2, impressions and intuitions turn into beliefs, and impulses turn into voluntary actions.

“When all goes smoothly, which is most of the time, S2 adopts the suggestions of S1 with little or no modification” Kahneman (2011).

S2 is lazy and is activated when a question analyzed by S1 remains unanswered.

The main function of S1 is to maintain and update a model of the personal world of each individual, which represents what is normal in it. S1 acts very quickly and offers to S2 an automatic and casual interpretation of what’s going on. This mechanism has well-founded biological bases: S2 – the deep thought – needs much more energy than S1 for its functioning. So, it’s better to ask the deep layers of our mind to work only when needed, leaving S1 all the operational daily work.

Taking into account that biases of intuition influence mainly S1, the focal point of the analysis developed by Kahneman is that if a choice has been based only on feelings and taken too hastily, it could be not rational, although perceived as suitable and sound by the person who has taken it. All the remedies preventing biases of intuition, therefore, deserve deep attention because of the possibility given to each individual to choose by himself pursuing his interest and avoiding inaccurate decisions. These remedies can be inexpensive and easy to enforce, a sort of gentle push rather than a prescriptive obligation, leaving each individual free to follow or not the suggestion. The term itself ‘nudge’, chosen as a general label for this large set of recommendations and policies, means (Thaler and Sunstein, 2008)

“to push mildly or poke gently in the ribs, especially with the elbow”, evoking low-cost and choice-preserving approaches to regulatory problems.

Some of the most important biases of intuition can be listed as follows:

*Priming Effect*: the exposure to words, images, situations that cause immediate and measurable changes in both the listing and the selection of one answer among a possible set of choices.

*Halo Effect*: the tendency to exaggerate the emotional coherence
in a process of choice, i.e., quoting Kahneman (2011),

“to like (or dislike) everything about a person – including things you have not observed”.

*Wysiati Effect*: what you see is all there is, with the meaning that our mind tends to consider as existent only the information retrieved (even unconsciously) from memory; as a consequence, when information is scarce, a common occurrence, S1 operates as a machine trying to jump to conclusion, neglecting the poor quality and quantity of the data.

*Anchoring Effect*: “it occurs when people consider a particular value for an unknown quantity before estimating that quantity”; therefore, two goods with exactly the same features and qualities are most likely to be valued in a different way if offered at different prices.

It is important to underline that all the effects depicted above – and others, like exposure effect, ego depletion, availability cascade, narrative fallacies, etc. – have the main outcome to impede a real and full functioning of S2 and, consequently, to oblige the individual to decide following only intuition, first sight, and so on. The mild push is necessary to turn S2 on.

### 4.1 A First Set of Remarks

The enforcement of behavioural economic analysis, as noted by Cass Sunstein (the Harvard lawyer who proposed with Richard Thaler the nudge approach),

“does not, by itself, demonstrate that more regulation would be desirable. To be sure, some of the relevant findings supplement the standard accounts of market failures, suggesting that in some settings markets may fail, in the sense that they may not promote social welfare, even in the presence of perfect competition and full information” (Sunstein, 2011).

Under this point of view, the disclosure of the information the individual needs for making a choice and, at the same time, the attention to avoid any problem of overloading and cognitive strain due to the presence of too much information, constitute a reasonable

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9 The Framing Effect is very similar, from the regulatory point of view.

10 It is also interesting to stress that some of these effects can affect also the functioning of S2.
general guideline. Put in other words, following the suggestion of behavioural economists, regulators should consider the consumer as he/she is and not as the regulator would like him/her to be (perfectly rational).

In doing that, any means able to overcome biases of intuition would be appropriate. As we outlined before, the list of remedies is often based on empirical findings and a complete exposition of the most important mechanisms inspired by behavioural economics is beyond the scope of this work. Nevertheless, it is worthy to underline that, among the most widespread devices, two are extremely interesting for a good regulation.

Mechanisms able to match the current benefits and the future costs. People often need nudges for decisions that are difficult and rare, for which they do not get prompt feedback, and when they have troubles translating aspects of a situation into terms that can be easily understood. This is the case, for example, of investments in energy efficiency, that most people do not undertake even when they would entail a benefit. In these situations, information about the net benefits for the consumer, as well as opt-out rules for small scale investments, should be introduced on the broadest possible scale for educational purposes.

Default rules: a section of Thaler and Sunsteins’s book is devoted to choice architecture. The authors pay particular attention at the structure of complex choice. Quoting the book,

“people adopt different strategies for making choices depending on the size and complexity of available options. When we face a small number of well-understood alternatives, we tend to examine all the attributes of all the alternatives, and then make tradeoffs when necessary. But when the choice set gets large, we must use alternative strategies, and these can get us in trouble”.

Among possible alternatives, Amos Tversky identified the ‘elimination by aspects’ mechanism, following which the selection is based on an iterative process of scoring within a subset of the variables used for the decision itself. Using this criterion of choice, an alternative that does not meet the minimum cut-off score may be eliminated even if it is quite appropriate on all other dimensions. For these reasons, any default that simplifies the selection, making possible the analysis only of the relevant information, is essential for granting a reasonable choice of individuals.
4.2 Microeconomic Basis

The remedies for the biases of intuition are only the first step for a full transposition of behavioural principles in economic and energy regulation. Behavioural economists, as a matter of fact, have identified a new set of assumptions as the basis for microeconomics entailing very interesting consequences for standard regulation. The so called ‘two selves’ and the prospect theory give us a good guide for seeking both problems and possible innovative tools to solve them.

Two selves: experience and memory can follow different paths; for this reason, Kahneman identifies the experiencing self beside the remembering one. These two selves are not in conflict with S1-S2 and stem from a wide set of experimental findings. For instance, the mind stores experience using the so called ‘peak-end rule’ and ‘duration neglect’, which means that the mind itself remembers the average level of pain reported at the worst moment of a clinical experiment and at its end. Moreover, the duration of procedure has no effect on the rating of total pain the patient attribute to the clinical experiment. Note that, following these findings, the total amount of pain (but the same applies to pleasure, etc.) is a very poor indicator of the individual’s utility (wellness, happiness, etc.).

The set of findings coming from this theory is very similar to those coming from other disciplines, like biology and anthropology. Among all, quoting Trivers (2011), one of the most important biologists in activity, the general system of logic works perfectly well for most subjects:

“At the heart of our mental lives, there seemed to be a striking contradiction – we seek out information and then act to destroy it. On the one hand, our sense organs have evolved to give us a marvellously detailed and accurate view of the outside world. (...) But once this information arrives in our brains, it is often distorted and biased to our conscious minds. We deny the truth to ourselves. We project onto others traits that are in fact true to ourselves – and then attack them! We repress painful memories, create completely false ones, rationalize immoral behaviour, act repeatedly to boost positive self-opinion, and show a suite of ego-defense mechanism. Why?”

The answer given by Trivers himself is that we deceive ourselves the better in order to deceive others – as pointed out in the title of his most recent book.

These findings are very interesting and potentially disruptive of the common approach to social sciences as well as to economic regulation, because they deny – at least in certain circumstances –
the convergence between, on the one hand, what the individual would like to do and, on the other hand, what it should be better for the individual himself. This fact, in case of incomplete knowledge and/or incomplete information about the environment where the decision itself has to be taken – in other words, about what is preferable for the individual – raises ethical problems very difficult to manage and solve, challenging the possibility itself to influence choices and, even worse, making the basis upon which to define a public policy uncertain.

Prospect theory: this theory is a synthesis of years of empirical and theoretical studies undertaken by Daniel Kahneman and Amos Tversky. Trying to depict the main features of the microeconomic base outlined by prospect theory, firstly, individuals are basically very cautious and conformist, because of the unwillingness to move from their ‘reference point’ (the current situation, that is the state relative to which gains and losses are evaluated, called even psychological value). Secondly, their utility function is asymmetric and shows a sensible loss aversion (i.e., the function in the domain of losses is steeper than in the domain of gains): this implies that the possible loss of a certain amount of money is weighted more than a possible gain (Gilboa, 2010). Thirdly, the loss aversion coefficient tends to increase when the stake rise, but not dramatically (with the upward limit given by the potentially ruinous losses, i.e. the losses threatening the lifestyle). Fourthly, a principle of diminishing sensitivity applies to the evaluation of changes of wealth: the increase of the utility of a gain of 10 € for those starting from zero is considered higher than for those starting from a wealth of 100 € (and the same applies when considering possible losses). Lastly, the individuals acting following the prospect theory prefer to lose with a 90% chance 1,000 € than to lose 900 € with certainty and, on the other hand, to win 900 € with certainty than to win 1,000 € with a 90% chance. This attitude is called ‘bad choice’.

Prospect theory demonstrates, following Daniel Kahneman view, that humans are guided by the immediate emotional impact of gains and losses, not by long term prospect of wealth and global utility. The theory itself challenges the foundation of choice theory, showing that, as stated by Gilboa at least for descriptive applications, von Neumann Morgestern’s axioms are violated:

“in systematic ways. Specifically, in prospect theory, Daniel Kahneman and Amos Tversky showed that people tend to magnify small probabilities in their behaviour. That is, people react to small probabilities as if they were larger than they are known to be”.

Prospect theory itself, being based on empirical findings, could be flawed on its own, as recognized by Kahneman himself and as reported in his last book. Making a comparison between two lotteries, both with high chance to win a big amount of money – let’s say, a 90% chance to win $1 million – and the first as alternative choice $50 with certainty, while the second as alternative $150,000 with certainty too, respondents gave unexpected results. Prospect theory and utility theory suggest to select the choice that takes with 90% chance $1 million in the two cases, but both fail to consider the regret, i.e. the anticipated pain of choosing the gamble and not winning. While in the first gamble the regret not to have won $50 seems immaterial, in the second case, the regret concerning the possibility to have with certainty $150,000 instead of taking the greedy decision of trying to win $1 million, should have a major role. Contrary to the selections made according to prospect theory and classical utility theory, many people prefer to have $150,000.

The consequences of prospect theory on economic regulation as well as on other social disciplines are noteworthy. Prospect theory – with the existence of both the reference point and the loss aversion – has shown that not only final outcomes matter when regulators design a set of rules. The path taking to that decision is important as well. In other terms, if you are not able to internalise in the rules themselves the effect of conformism, your design will be probably seriously flawed and, very likely, the target you set will not be achieved.

4.3 Further Remarks

The consequences on regulation coming from the analyses developed by behavioural scientists are difficult to evaluate. The unwillingness to move from the reference point (or ‘status quo bias’) can be considered as a rational basis for the idea of nudge. The reason is that, confronted with difficult choices, without a gentle push, most individuals would rather prefer not to move, notwithstanding the potential advantage deriving from the move itself. Moreover, regulators have to understand how to define rules if either the individual is not rational, at least in the classical sense, or it is impossible to know in advance what the individual is about to choose. Being aware of all the political, ethical and philosophical issues connected with all that, no wonder that the regulators have not yet expressed an explicit position on the point.
One more possible situation shed light on the complexities of the task. In case of very small available information, for example when neither an average individual nor a regulator (made by human beings in the end) can be sure about the right decision to be taken. Or, to bring another example, when only a small subset of individuals has the correct information but is not going to share it with others. Thaler and Sunstein label similar situations ‘pluralistic ignorance’, occurring when the perceived decision of some leaders influence a much larger population– the typical case would be adolescents with regard to tobacco smoking, food consumption, etc.\footnote{“We may follow a practice or a tradition not because we like it, or even think it defensible, but merely because we think that most other people like it. Many social practices persist for this reason, and a small shock, or nudge, can dislodge them”. They keep on giving the example of communism in the former Soviet bloc, “which lasted in part because people were unaware how many people despised the regime” (Thaler and Sunstein, 2008).}

Behavioural economics underline the role of proper information and of open, transparent procedures for rational choices. In a very recent paper, Sunstein (2010) considers disclosure, \textit{per se}, as one of the most important tool for a regulator. And we think that he’s undoubtedly right. Nonetheless, it must be remembered that, as already pointed out also by sociologists, philosophers and biologists, in a social environment a rule is often adopted notwithstanding its real content. Habits, conventions, as well as moral attitudes, can tie together communities, even if having no connection with reality. Similar situations are more widespread than we perceive according to behavioural economists. Moreover, the rule, once defined and enforced, tends to justify itself and all the subsequent discussion tends to have as a general framework the same rule\footnote{On this point, among others, see the analysis made by Foucault (1988), Bodei (2009) and Trivers (2011).}.

In such a situation, we need of course more information, as it’s very likely that a ‘nudge’ may prove insufficiently strong to achieve the desired outcomes. At any rate, the fundamental message and value of behavioural economics is clear. The pursuing of rationality, but even freedom, justice, protection of environment must rely on transparent proceedings, open discussion and comparison between theory and reality. There is no total guarantee that this procedure conveys/attains the results we hope for but any other method is likely to give us poorer results.
5. CONCLUSIONS

As we have previously put forward, the analysis developed at both European and national levels by the Commission, CEER and OFGEM, as well as reflections underway in the Italian regulator (AEEG, 2012), read in the light of the behaviourist contributions, has clarified that neither full information disclosure nor fully transparent procedures guarantee, per se, the attainment of the most effective regulatory interventions. These two conditions should rather be seen as two necessary conditions to develop an adequate and balanced framework. But we need more. Mechanisms to improve the perception of future costs (benefits) against short-term benefits (costs), as well as well-designed default rules will play a central role in the attempt to strengthen the overall quality of regulatory actions. The enforcement of this kind of mechanisms should make possible to guarantee the full freedom of choice and, at the same time, to guide this freedom in a soft/gentle way.

At the time being, the behavioural approach doesn’t show a way to select a detailed list of tools or prescriptions to be used for a good regulation. These findings can be seen as an open agenda with continuous improvements and updating, based on both theoretical and experimental analyses. In European energy sector, a change in regulatory approach is necessary to address growing concerns regarding low switching rates among small consumers, under investments in energy saving and (with regard to smart metering) possible slow reaction to retail price innovation.

Some of these issues prove that the first phase of liberalization, primarily consisting in the establishment of competitors on the market, is still to be completed in many countries, while the second phase of the liberalization process, centred on exploitation of social benefits, is still in an early stage of development. The current economic crisis further influences the market, at least increasing firms’ preference for short-term strategies and opportunistic behaviour also towards regulators, rising tension between the protection of marginal customers and the relief to ailing market players.

At any rate, we think that some paths can be picked out. For example, default options and tariffs could become more incisive if referred to a broader set of products and services. With the increase of possible savings, consumers should become more active than today. This option has however to be checked against the possible anticompetitive effects of rebated and bundled offerings from dominant players. In a similar way, the identification of options
encompassing consumption and energy efficiency could foster consumers to make more investments in this field.

Moreover, the action of consumers would be more powerful if addressed not only to purchasing of energy but to other activities like production, investments, etc. Most of economic profits of the suppliers are obtained in these segments of the industry. Recent contributions by Littlechild (2012) focus on the possibility that well-balanced procedures and decisions concerning, for example, tariffs for transportation and distribution of energy will be at hand, once all the sides of the market have discussed and analysed possible outcomes rather than concentrate on lobbying the regulator.

Concerning procedures, the quality of the dialogue seems to be fundamental for a better regulation. The capacity to differentiate the message to different customer segments in a not too technical way, important since the beginning of liberalisation processes, is becoming a critical need. If possible, this issue is even more important when the solution of the problem is not identifiable in advance, i.e. the issue is complex in itself. In this kind of situations, that Thaler and Sunstein (2008) have labelled ‘pluralistic ignorance’, the sharing of the solution, among the widest possible set of stakeholders, can be considered as a condition to avoid major faults and guarantee public support to the decision.

As a final remark, we think that the most important advice the behavioural approach since now has given to regulators concerns information on real market developments and transparency, both considered very important requirements. Consumers and other stakeholders need to be part of a decision process in order to give a contribution to reach a better outcome. In this respect, regulation is just one of the possible ways to deploy a democratic government of a community.

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Consumers’ behaviour and energy regulation in Europe


**ABSTRACT**

Energy consumers’ activity in Europe is in general quite limited, despite the potential benefits made available by market liberalization process. The two major issues are the low level of retail switching among gas and electricity suppliers and the scarcity of investments in energy efficiency. According to EU wide surveys, these outcomes are mainly due to a widespread lack of confidence in market functioning, despite the considerable efforts of the regulators to foster both the competition on the suppliers’ side and consumers’ protection. In addition, active consumers’ behaviour often does not lead to maximization of their economic benefits. In recent years, behavioural scientists have shown that consumers’ choices are systematically biased, hence suboptimal or even detrimental, due to their ‘bounded’ rationality – as opposed to the neoclassical model of perfect rationality. Such observations are making energy regulators increasingly aware that they have to modify their approach, switching focus from formal information disclosure to real consumer empowerment. Nevertheless, there is high uncertainty on how to achieve this goal, reforming the current regulatory framework, due to the lack of consolidated theory and practice.

An innovative approach, originally proposed in the US that is attracting strong interest also in Europe, is known under the label of ‘nudge’. This is based on the observation of cases, mainly outside energy sector, where small, non-intrusive measures – essentially based on retail information management – have given good results. Nevertheless, nudging has attracted some critics related to the possible lack of transparency towards end users. Whatever the approach will emerge, behavioral insights are inducing policy makers to
rethink and, ultimately, make more effective the current regulatory action, with the advantages of a better understanding of real consumers’ needs and a more flexible and participated decision-making process.

Keywords: Behaviour, Choice, Consumers, Energy, Regulation
JEL Classification: D03, D18

RIASSUNTO

Comportamento dei consumatori e regolazione del settore energia in Europa

L’attività dei consumatori europei è in generale abbastanza limitata nel settore dell’energia, nonostante i potenziali benefici resi possibili dal processo di liberalizzazione dei mercati.

Due tra i problemi principali sono la resistenza al cambio di fornitore di elettricità e gas e la scarsità di investimenti nell’efficienza energetica. Questi risultati sono principalmente dovuti, secondo indagini effettuate a livello europeo, ad una diffusa mancanza di fiducia nel funzionamento del mercato, nonostante i notevoli sforzi delle autorità di regolamentazione per favorire la concorrenza dal lato della domanda e la protezione dei consumatori. In aggiunta, il comportamento dei consumatori attivi spesso non li porta alla massimizzazione dei benefici economici. Negli ultimi anni, gli scienziati del comportamento hanno dimostrato che le loro scelte sono sistematicamente distorte, quindi non ottimali o addirittura dannose, a causa della razionalità limitata, opposta alla razionalità perfetta del modello economico neoclassico. Queste evidenze rendono i regolatori del settore energia sempre più consapevoli del fatto che è necessario cambiare approccio, spostando il centro della loro strategia dalla divulgazione di informazioni, comunicate in modo formale, a un reale rafforzamento del consumatore. Tuttavia, vi è incertezza su come raggiungere questo obiettivo, adottando nuovi strumenti di regolazione, per la mancanza di una teoria e di pratiche consolidate.

Un approccio innovativo, proposto inizialmente negli Stati Uniti, che sta attirando un forte interesse anche in Europa, è conosciuto sotto l’etichetta di nudge. Questo approccio si basa sulla osservazione di casi, soprattutto al di fuori del settore energetico, dove piccoli e non invadenti misure – essenzialmente basate su una gestione efficace delle informazioni – hanno dato buoni risultati. Tuttavia, il nudging ha attratto alcune critiche legate alla possibile mancanza di completa trasparenza nei confronti degli utenti finali. Qualunque sia l’approccio futuro che emergerà, le analisi comportamentali indurranno i decisori pubblici a ripensare e rendere più efficace l’attuale azione regolatoria, a vantaggio di una migliore comprensione delle reali esigenze dei consumatori e di un percorso decisionale più flessibile e condiviso.