

The Magazine of the Consumers' Association of Ireland

Consumer Choice



www.thecai.ie

APRIL 2016

PRODUCT PACKAGING - UNWRAPPING THE PROBLEM FOR OLDER CONSUMERS

€ MONEY

- CAR FINANCE OPTIONS
- CROSS-BORDER CAR PURCHASES

📺 LIFESTYLE

- INACCESSIBLE PACKAGING
- ENERGY DRINKS RESEARCH

📺 PRODUCT TESTS

- MICROWAVE OVENS
- TELEVISIONS

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April 2016

As you will know, the Consumers' Association of Ireland (CAI) will celebrate its 50th Birthday in July of this year. You will read more of that over the months ahead.

The very reason that the CAI continues is entirely due to the contributions of our Members through their annual subscriptions which, as well as allowing us to produce *Consumer Choice* magazine, go towards assisting us in maintaining our representations in BEUC, ANEC, ICRT and the many other EU and national boards and bodies upon which we represent the consumer interests.

A major part of our success is directed by the Council who voluntarily give their time, expertise and support to all that is the business of running a highly engaged Association.

However, we continue to struggle. We need more Members to assist the current Council and to bring added knowledge and expertise as well as support from fresh perspectives toward raising membership and much needed funding. I urge you to contact us when we seek Council application over the coming months.

Those of you who have provided us with an email contact address will hear from us directly requesting ideas, contributions and suggestions for growth and better engagement.

For Members who have not yet provided an email address I am hoping that you will consider doing so. It is important that we engage with the CAI membership beyond the confines of the magazine and in a cost-effective and affordable way. Email allows us to do just that and so I hope that you will contact us with your details, by email, to cai@thecai.ie.

We are eager to add your views, to our voice, from your Association.



Dermott Jewell



Our Reports

Reports in Consumer Choice are based on market research, laboratory tests or user surveys, all of which are independently and scientifically conducted. Free goods are never accepted for testing – all samples are purchased. Occasionally items may be borrowed for review purposes only.

The reports are produced in the main by our own Editorial staff. Some material is occasionally drawn from other foreign independent consumer magazines.

Because Consumer Choice carries no commercial advertising it is not swayed by bias or influence and can point out advantages and flaws in goods and services that other magazines may not be able to do.

Reports on any article relate only to the articles or goods mentioned, and not to any other article of the same or similar description. We do not necessarily price or report on all brands or models within the class, and the exclusion of any brand or model should not be taken as a reflection on it.

Consumer Choice

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News Briefs by Dermott Jewell

News Briefs

The latest information
on the world of the
consumer

Salt – Shock - Fork!

I read, through Silicon Republic, how researchers in Japan have developed a new type of fork that engineers a salt flavour in your mouth by sending electric shocks to your tongue. Our tongue can get a sensation of a salty or sour taste when electricity is applied to it and so, as there is such a serious health risk associated with overindulgence of salt in our diet, we have this prototype. The handle of the fork is basically a rechargeable battery and electrical circuit, with a button on the side used as the trigger for the electrical charge. The researchers at the Rekimoto Lab in the University of Tokyo are hoping they can develop a safe, useable and, obviously, saleable product in the near future – so am I. If you are reading this on April 1st then, no, this is not a joke. It's more like a shout out from Father Jack!



Health Challenging Rip-Off

Our colleagues at BEUC, of which the CAI is a long-standing contributing Member, advises how over 100 renowned French oncologists have issued a statement denouncing the exorbitant prices being charged for cancer drugs. Through the national paper *Le Figaro*, they expressed their opposition to what they called the "obscene profits of the pharmaceutical industry", which currently sets medicine prices according to what the market is willing to pay. Better still, they went on to contest the argument commonly advanced by the industry concerning their return on investment, highlighting the reality that less than 15% of their revenue is invested in Research and Development (R&D).

They have called for the setting of a "fair price" for the cancer drugs, based on the amounts invested by industry in R&D for the product, but, also taking into account the inputs provided by the public academic research.

To this price, they then proposed to add a percentage to guarantee a return of investment. In addition, they called for the creation of a transparent price-setting mechanism with the permanent involvement of patients and professional representatives. The oncologists will now turn this call into a petition. The CAI Council will consider how we can inject similar enthusiasm into practitioners in Ireland.

A COMMON CAUSE – REGRETTABLY



ANEC, the EU body raising standards for consumers and of which the CAI is a contributing Member, has highlighted how, at least, 200,000 people across the EU suffered life-changing consequences resulting from traffic collisions in 2014. Since 2010, the number of people seriously injured on EU roads has been reduced by just 1.6%, compared with an 18% decrease in the number of deaths. Last year, the numbers seriously injured went up by more than 3% compared to 2014 statistics.

ANEC fully supports the European Transport Safety Council (ETSC) in its campaign to reduce road injuries. They have engaged with members both to raise awareness and to lobby MEPs to sign the Written Declaration on serious road traffic injuries. So far, 143 MEPs have signed the Declaration. We will see how many from Ireland have signed up and encourage support.

Putting Fish Fingers in the Halfpenny Plaice

Researchers from the New Jersey Institute of Technology (NJIT) claim to have found a blind fish that 'walks' by climbing waterfalls. Their discovery of the *Cryptotora thamicola*, a completely blind fish, in caves in Thailand, is the first uniquely living example of such a water-borne creature that possesses evolutionary

development not seen in any other living species. This is exemplified through its body structure that developed to allow it to fight against strong water currents in caves to climb a waterfall slowly using four 'feet' in a manner comparable to tetrapods, or four-footed mammals and amphibians. The discovery also has major

implications for our understanding of the first creatures that emerged from the planet's oceans that were capable of living, and walking, on land. This is because the research team have confirmed that this fish has many of these same characteristics. I suggest you visit www.njit.edu to see for yourself.

MADE SOMEWHERE FROM SOMETHING (MSFS)

In a highly controversial tweet, the French Minister for Agriculture announced that the European Commission had accepted a new law requiring mandatory country of origin labelling for meat in processed foods and milk in dairy products - albeit on a trial basis. The law will apply when the milk or meat content represents more than 50% of the final product. The food industry says the French draft is a threat to the internal market and is putting pressure on the Commission to start legal action. The fact that this refers to as little as 50% content shows how focussed on the bottom line this sector has become. The CAI has been fighting for Country of Origin Labelling (COOL) on the home front for quite some time now. I think you will see, as do we, how this will be a long fight!



A Ring of Confidence

You know by now that I try to bring you the very important issues and gems of wisdom that, hopefully, leave you a little more informed than most. Here is one regarding national pride that I hope you enjoy. The wonderful people in the research laboratories of Princeton University in the USA have been labouring long and hard to determine why it is that coffee always leaves rings on the table but whiskey rarely does so. It is all about quality - of the whiskey, of course. There are no surprises, therefore, that Irish whiskey leaves distinct and complex sets of rings - as does a decent Scotch. The whiskeys that don't leave rings have a different molecular make-up that lowers the surface tension. No rings. Why is this important? It is because the properties behind whiskey, leaving uniform residual remains, could play a key role in future coating technologies (the scientific part). It is also a means of knowing you have a decent drop in the house for valued visitors. This does, regrettably, mean that you have to try a glass and see if it passes the test. Sláinte!

Money News

 Money News by *Róisín Moloney Weekes*

Purchasing a car from abroad

"The European Consumer Centre (EEC) Ireland recently issued its cross-border car purchase report as well as country-specific fact sheets to help consumers to be more informed and aware of their rights when purchasing a vehicle abroad."

Many consumers look across the water and further afield to find better value for money or more choice. Of course, there are many questions when it comes to purchasing a new car and while value for money is, for most, the main consideration, we must be informed as to the true costs before making a call on what is good value. In an effort to help consumers ask the right questions, the ECC Network, coordinated by ECC France, carried out an extensive study into the hurdles faced by consumers when purchasing vehicles across borders. The ECC has produced a series of guidance documents giving practical advice on the different steps on buying a car in another member state. This advice ranges from the initial transaction to the registration procedure and is a helpful aid for such consumers.

The ECC identifies the purchase of new and second-hand cars as a major issue for consumers and attributed this to the fact that car purchases are so expensive. Some of the main issues that were raised include payment of VAT, payment by cash, obligations on sellers to provide vehicle inspection, what to look for in the contract of sale, how to cancel a contract and various questions on what documents are required.

The ECC documents a number of Irish case studies included in the report that make for interesting reading. In one case, an Irish consumer wanted to purchase a second-hand car from

an official car dealership in the UK. The consumer paid a £1,000 deposit and then transferred the balance of £35,620. After a number of exchanges, the date for the consumer to collect the car was eventually agreed upon. However, when the consumer travelled to the dealer's premises in the UK to pick up the car, the dealer refused to release it as the consumer presented an Irish passport. The dealer refunded the consumer, stating that "the reason for not completing the sale of the [car] is because [the consumer] paid the funds from a bank in southern Ireland". The consumer felt discriminated against and also expressed his dissatisfaction in relation to the losses incurred as a result of processing bank transfers (bank fees and unfavourable fluctuations in the currency exchange rate), as well as the travelling expenses. Following the intervention of the Irish and UK ECCs, the dealer agreed to reimburse these expenses and to pay compensation for the inconvenience caused. In total, the consumer received a payment of over €2,000. The dealership also agreed to retrain its staff to avoid similar situations arising in the future and to sell a car to the consumer if so requested.

In a second reported case, an Irish consumer intended to buy a car via a website purporting to be run by a UK-based car auctioneer. He paid £8,000 by bank transfer but no car was ever received. The consumer turned to ECC Ireland

for assistance, only to be told that the website had been registered just months before the transaction using graphic materials and vehicle specifications from another site and that there were other irregularities in relation its content and advertising channels. Given these findings, no amicable settlement could be attempted and the matter was referred to the UK police, which had received reports from 40 victims in relation to this fraud.

So, while there may be value to be had overseas, there are also more pitfalls. It is, therefore, most important that consumers remain vigilant, do the required research and take into consideration the overall cost of purchasing abroad.

ECC Ireland is part of the European Consumer Centres Network (ECC-Net), which covers 30 countries (all EU countries plus Norway and Iceland), and offers a free and confidential information and advice service to the public on their rights as consumers, assisting consumers with cross-border disputes. Information and practical advice that can be used before, during and after a car purchase is available from the ECC Ireland website <http://www.eccireland.ie/>.

Further advice and fact sheets on other EU Member States are also available at <http://www.europe-consommateurs.eu/en/consumer-topics/on-the-road/buying-a-car/cross-border-car-purchase-and-registration/>.

Changes at the Office of the Financial Services Ombudsman

A recent press release from the Financial Services Ombudsman (FSO) outlines some significant changes in how it will now be dealing with complaints, indicating that a more direct interaction with consumers and service providers is on the cards. The FSO also promises to 'raise the bar' on consumer protection and address issues early on before they become systemic. A key driver in this change is the introduction of a dedicated Dispute Resolution Service, which involves a minimum of formality through telephone and in-person meetings as now the preferred option for resolving complaints. If this step is unsuccessful, then the next step involves the FSO investigating and adjudicating complaints.

After the completion of a Strategic and Operational Review into the operations of the Financial Services Ombudsman's Bureau and the Office of the Pensions Ombudsman, these changes are being implemented - changes that are certainly welcomed by the Consumers' Association of Ireland (CAI).

Financial Services Ombudsman Ger Deering said that

"Decisions made by the Financial Services Ombudsman can have profound implications for those whom they affect. It is therefore essential that all who use the service can continue to have confidence that complaints will be dealt with in a fair and transparent manner and that the principles of natural justice will apply. Good quality flexible dispute resolution processes combined with robust and fair decisions must be the hallmark of our service".

Mr Deering indicates that the aim of such changes is to reduce the amount of time it takes to resolve a complaint, which it is hoped will in turn lead to more capacity to focus on preventative measures. Mr Deering also noted, "While I strongly encourage financial service providers to engage fully and resolve disputes through the early dispute resolution process I have made it very clear to them that where that does not happen I will use my extensive powers of adjudication to ensure fairness for consumers. These include the power to award compensation of up to €250,000 where a complaint is upheld. This can include where I consider that

the conduct by the provider is unreasonable, unjust, or oppressive. Importantly, compensation is not the only remedy available from me, I also have powers of rectification. Such rectification can be very significant as it can involve putting a person back to a position where they previously were before the complaint arose. This, in some instances, such as where a home or life insurance policy has been voided or a claim denied, is more important for the complainant than the compensation. In addition, I can also require the financial service provider to change a practice relating to that conduct".

Mr Deering concluded that he "will not be found wanting in using these powers as they were intended to redress the balance between consumers and financial service providers".

Any measure that balances the playing field for consumers is to be greatly welcomed and the CAI will be keeping an eye on how these changes unfold and impact on consumers. More information is available at www.financialombudsman.ie.

How informed are consumer decisions?

Unfortunately, it seems they are nowhere near as informed as they should be. Research has been carried out by Amárach Research into the extent to which people felt knowledgeable about a number of financial topics such as credit scores, pensions, investing money etc. The results are somewhat grim with one third of people claiming that they have some knowledge when it comes to managing their finances.

The worst areas for knowledge are investing money and pensions. While results indicate that as people get older they increase their knowledge about pensions, surely it is when people are younger and beginning their pensions that such knowledge is particularly important. With an ageing population, we will become increasingly dependent on pensions and so this lack of knowledge needs to be addressed.

Another disappointing result from this research can be seen in terms of gender difference with approximately 50% less females than males claiming to know some or a lot about pensions and investing money. Females also fall behind males in managing finances, knowledge of interest rates and credit terms, and questions about credit ratings.

Table 1 outlines the results of this research carried out by Amárach.

%Who know "some" or "a lot" about each of the following:	All adults	Male	Female	16-24	25-34	35-44	45-54	55+
Managing finances	33%	36%	31%	25%	29%	26%	37%	45%
Interest rates and credit terms	26%	33%	19%	14%	21%	20%	28%	41%
What's on your credit report	24%	27%	20%	14%	26%	21%	24%	29%
Credit ratings	23%	31%	15%	12%	19%	19%	24%	35%
Pensions	23%	30%	16%	10%	16%	18%	29%	37%
Investing money	22%	28%	16%	14%	16%	19%	27%	31%



Product/Tech News

Product News by *Clodagh O'Donoghue*

A little light cleaning

Boeing is seeking to boost the hygiene levels of its airplanes' toilet facilities. Many worry about the potential for increased risk of contracting some nasty bug or other when flying due to being in a confined space with so many strangers – and unsurprisingly, one of the 'germiest' areas where bacteria run rife is the airplane toilet, often shared among around 50 passengers and with little chance of undergoing a proper clean for perhaps many hours on end. Boeing's answer is a self-cleaning lavatory that uses non-touch technology, aimed at minimising the number of surfaces that passengers come in contact with, combined with ultraviolet light that is claimed to destroy 99.9% of germs in a swift three seconds.

Still under development, the lavatory provides a door latch, tap, soap dispenser, rubbish flap, toilet lid and seat, and hand dryer that are all hands-free – so passengers can avoid touching surfaces as much as possible. In addition, a vacuum vent system is installed in the floor that sucks away potentially harmful particulates.

And once the passenger leaves the lavatory, a series of ultraviolet lighting strips are activated that use the same far UV light found in medical sterilisation stations. Far UV light differs from ultraviolet A or ultraviolet B light used in tanning beds and is not harmful to humans. This lighting floods the cubicle and kills germs in seconds, with the toilet lid automatically lifting itself up, so all surfaces are exposed for comprehensive cleansing. As an extra precaution, a safety system ensures that the lights will not be activated if someone is in the cubicle. Boeing claims that this UV sanitisation process also helps to eliminate odours to ensure a more pleasant experience for users.

The germ-phobic will undoubtedly welcome this new development if and when it comes on stream, though they may still need to bring disinfectant wipes in their carry-on luggage for other notable germ-ridden spots such as tray tables and seat pockets.



Boeing's self-cleaning lavatory

Selfie pay

Many of us are addled trying to remember the different online passwords and PIN codes for our various bank and credit cards, but MasterCard users may soon have one less number sequence to recall – all they will need to do is to take a selfie. MasterCard is preparing to enable users to authenticate payments by means of facial recognition and fingerprint technology.

At present, MasterCard uses SecureCode, a programme that lets participating retailers and service providers verify the legitimacy of the payment by asking the customer to enter a PIN at the point of purchase. However, the company has been running a pilot project that allowed participants to complete online purchases without PIN codes, passwords or confirmation codes, and instead using fingerprint or facial verification. At the Mobile World Congress recently, MasterCard announced that, following the positive reaction received by its pilot programme, it will be expanding the offering to a number of countries worldwide. With the new function, online purchasers using a smartphone or other mobile device will still have to enter their credit card details but, when additional authentication is required, a previously downloaded MasterCard Identity Check app will ask them to authorise the payment by using the fingerprint sensor or snapping themselves on the device's camera.

This is undoubtedly a convenient option, especially for forgetful types who can't remember their four-digit code, but such biometric identification is also aimed at boosting security, with the idea being that a person's face or fingerprints cannot be lost or stolen. However, as commentators have pointed out, although the uniqueness of faces or fingerprints may make them seem inherently secure, they are effectively just turned into a password by the computer. As a result, such biometric data may still be open to being stolen and this could potentially have far greater repercussions than someone uncovering a password that can subsequently be changed. Thus, there are some concerns about biometric payments.

However, MasterCard feels that the commercial interest and consumer appetite is there and that the new identification options will ultimately cut down on potential fraud. The company says it has gone to great lengths to ensure that the system is not easily fooled – for example, its algorithms can differentiate between a real person and a video recording and selfie takers will need to blink into the camera to prove they are a living, breathing human rather than just a photo.

The company plans to roll out the technology in the US, UK, Spain, Italy, Sweden and elsewhere in Europe during the summer.

The products featured on these pages have not been tested by the Consumers' Association of Ireland and their inclusion here is not, in any way, an endorsement of them.

Rainy day solution

Motorcyclists in this rain-sodden part of the world might be interested in a new invention from the equally soggy UK. Called Rainpal, essentially it is a mini electric windscreen wiper that attaches to almost any motorcycle helmet visor – and if it doesn't fit, the manufacturer says it will give you your money back.

Users attach a mounting plate to the top of the helmet's visor with an adhesive strip or using the inner suction cups that the manufacturer says will prevent detachment. The Rainpal wiper is then clipped on and is ready to go into action when the heavens open. The wiper is activated either using a button on the Rainpal itself or by operating a wireless kit that is positioned on the motorcycle's handlebar.

The Rainpal has been tested up to speeds of 100 mph and can do just about everything a car's windscreen wipers can do – so you can vary the wiper speed, adjust wiper delay, and spray water from an internal reservoir if you need to clean your visor while in motion. The manufacturer also claims that Rainpal will help reduce visor fogging by removing the cold rain on the outside of the visor that reacts with the warm air on the inside to create condensation.

The wiper is charged via USB either at home or in the office before you set out or on the motorcycle itself if you have an USB charger installed, and each swappable battery pack lasts about 90 minutes on continuous wipe and longer with a two- or three-second delay.

And when the sun comes out, the whole device is detachable and comes with a hard case for storage on the motorcycle. It may not sound the coolest of devices, but it could prove useful in greatly increasing visibility when the rain is pelting down and is currently available for £49 (€62 approx.) without the wireless function or £70 (€89 approx.) with wireless.

Message in a bottle

This one sounds like something straight out of the Hogwarts School of Witchcraft and Wizardry alongside Howler letters that scream at you when you open them or a Pensieve in which to store your memories...but this is some real-life magic dreamt up by two Japanese students. The Otopot is a small pot or container in which you can store short voice messages and then pour them away when you no longer need them.

To record a message, you simply lift the lid of the rechargeable pot and speak into it, with up to one minute's recording time available. Once you close the pot, the message is kept until someone comes along and opens the pot – at which point the message will be played back. The recipient of the message can hear the recording repeatedly simply by lifting the lid. Uses that have been suggested include leaving a positive or uplifting message by a child's bedside for them to hear when they wake up or alongside a morning cuppa for a significant other to play as they start the day. Although a scribbled note could perform the same basic task, the inventors suggest that the human voice is far better at conveying the emotion and feeling behind the message – and they wanted to design a process that was as simple and intuitive to use as possible.

When the message is no longer needed, it can be erased by simply tilting the pot and 'pouring' the message out as if it were water...and a water streaming sound is emitted as you perform this action. The pot, which only holds one message at a time, is now free to accept a new message or reply – and it certainly offers a novel way of holding a conversation. This sweet little invention is only at the prototype stage but is garnering interest and the designers are hoping to bring it to market in the near future.

Mopping-up operation

Robots that do our household chores for us may well be where technology is headed, with robotic vacuum cleaners and lawn mowers already on the market. US company iRobot recently added to its range of vacuuming, floor scrubbing and gutter cleaning robots the tiny Braava Jet to mop your hardwood, tile or stone floors. With its square shape and compact size, the manufacturer claims that this device is perfect for getting at tricky-to-reach places like under and around toilets, into corners and beneath presses.

It has three modes – wet mopping, damp sweeping and dry sweeping. You attach the appropriate cleaning pad depending on what function you want the Braava Jet to perform and the machine will automatically do the rest. If you attach a wet mopping cleaning pad, the Braava Jet will use a water-activated cleaning agent and emit the maximum amount of spray to tackle tough dirt

and stains with the help of the vibrating cleaning head. If you attach the damp sweeping cleaning head, only a moderate amount of water will be sprayed out and the vibrating cleaning head will provide some gentle scrubbing action – whereas, with the dry sweeping cleaning pad, no water or spray will be used and the device will perform a simple sweeping action. The machine uses iRobot's iAdapt 2.0 navigation technology to find its way around and, once it completes its room circuit, it will return to its starting point to dock and recharge.

Currently selling for \$199 (€176 approx.) in the US and Canada, the iRobot Braava Jet should become available to be purchased online here in due course alongside other iRobot products. A set of ten cleaning pads costs \$7.99 and the more environmentally conscious might consider the washable wet cleaning heads available for \$19.99 for a pack of two.





 REPORT by Sarah Breathnach

The Truth About ENERGY DRINKS

Consumer Choice examines a recent review by *safe food* that indicates that the consumption of 'stimulus drinks' may have adverse health consequences due to the high levels of sugar and caffeine found in these increasingly popular products.

The energy drinks market is burgeoning. A recent report conducted by *safe food* has found a significant (eightfold) increase in the number of energy drinks on sale in Ireland since 2002. In 2015, just over one-fifth (21%) of the total soft drinks market on the island of Ireland was accounted for by energy drinks and sports drinks, amounting to a combined advertising spend of more than €1.8 million. Although there is no standard definition, the term 'energy drink' is most often used to describe a non-alcoholic, highly-caffeinated beverage marketed as performance enhancing and energy boosting. Despite the market growth, health concerns regarding the caffeine and sugar content in energy drinks have been raised by both the public and the scientific community, along with worries about the frequent use of these drinks as a mixer with alcohol.

What is in an energy drink?

Alongside their main active ingredient caffeine, energy drinks derive their stimulating properties from ingredients like taurine, ginseng and glucuronolactone and sometimes vitamins, minerals and herbal substances. Regarding the 39 energy or stimulant drinks on the current Irish market, sugar and caffeine content are the primary concerns. According to *safe food*, "a typical small 250ml can has sugar levels of 6 teaspoons per can which is equivalent to a full chocolate bar". The caffeine content is also high, with a standard 250ml can of energy drink containing around 80mg of caffeine, equal to a 60ml espresso, one and a half 500ml bottles of standard cola or two 200ml cups of tea.

With the growing prevalence of obesity and the threat of diseases such as type 2 diabetes, public health campaigns

have made consumers acutely aware of the consequences of over-consuming sugar. The health effects of caffeine are perhaps lesser-known. Research indicates that the overconsumption of caffeine can result in restlessness, anxiety, irritability, tremors, heart palpitations, insomnia, nausea and headaches.

According to *safe food*, energy drinks contribute little or no nutritional benefit to the diet. Energy drinks or stimulant drinks, however, should not be confused with sports drinks such as Lucozade that use the term 'energy' on their labelling. Such drinks do have nutritional benefits, containing electrolytes and carbohydrates to enhance fluid absorption, support rehydration and provide a source of energy during exercise. In contrast, the caffeine contained in energy drinks acts as a diuretic, meaning that the combination

of perspiring during exercise and the diuretic effect these drinks produce could cause severe dehydration. Accordingly, the Food Safety Authority of Ireland (FSAI) and *safe*food stress that unlike sports drinks, energy or stimulant drinks should not be consumed during or after sports activities as a form of rehydration.

How often can I drink them?

The European Food Safety Association (EFSA) advises that adults do not exceed an intake of 625ml (two and a half 250ml cans) of energy drinks on a single drinking occasion and that all sources of caffeine (energy drinks, coffee, tea etc.) need to be factored in to remain within recommended daily limits. Some data suggest that most healthy adults can safely consume around 400mg a day, but pregnant women are advised to limit their caffeine consumption to 200mg as overexposure has been linked with low birth weight in newborns. It should nevertheless be noted that caffeine tolerance differs from person to person, making it difficult to set a universal, recommended limit.

The marketing of energy drinks

As of December 2014, under EU legislation drinks containing 150mg or more of caffeine must display the statement "High caffeine content. Not recommended for children or pregnant or breastfeeding women" on their labelling. This statement must be placed near the name of the product and the caffeine content in mg per 100ml must be specified. The majority of energy drink brands examined by *safe*food were found to comply with EU labelling regulations. In terms of advertising, researchers noted that social media campaigns focusing on high-adrenalin activities and music aimed specifically at active young people were used extensively by brand leaders to promote their products. Unsurprisingly then, the report found the highest consumers of energy drinks to be young people, most often males aged between 15 and 24. The report also emphasised how the low cost of some energy drinks, with some brands selling at less than 50 cent a can, may further entice the younger market.

Energy drinks and children

Attractive packaging and exciting brand names such as 'Monster' and 'Tiger' undoubtedly appeal to children. Under current EU labelling regulations, manufacturers are not required to specify any age limit for children and retailers are not obliged to check the age of purchasers. While EFSA has not advised a safe limit of caffeine intake for children, their smaller body mass is likely to result in a caffeine

tolerance that is considerably lower than that of an adult. In recognition of this, Energy Drinks Europe, a trade organisation, has created a voluntary code of practice for the marketing and labelling of energy drinks for members which states that products will not be marketed to children under 12 years of age, members will not place any marketing communication in media channels where the audience is greater than 25% children and members will not engage in any direct commercial activity in primary or secondary schools, including placing of vending machines. Going one step further, *safe*food has deemed energy drinks unsuitable for all those under 16 following extensive research. It is therefore recommended that parents monitor both their children's exposure to energy drinks and their caffeine intake closely.



Energy drinks and alcohol

The use of energy drinks as a mixer with alcohol is common practice, particularly among young people in Ireland. A recent study conducted by UCC found that almost 43% of university students consume energy drinks in combination with alcohol. Bars and late-night venues regularly use drinks promotions offering a 'shot and energy drink combo' such as a 'Jager Bomb' which is a mixture of Jagermeister (a 35% alcohol by volume German digestif) and an energy drink, most commonly Red Bull, to attract business. Recently, studies have begun to trace a connection between the consumption of energy drinks with alcohol and unhealthy drinking behaviours. Increases in risk-taking behaviours such as high-speed driving and unprotected sex have been linked to this form of mixing. It should, however, be noted that the concerns surrounding alcohol and energy drinks are not related to moderate consumption but rather binge drinking. It has been argued that the overconsumption of highly caffeinated energy drinks may reduce drowsiness allowing individuals to continue drinking for longer. The worry

then is that the use of energy drinks as a mixer with alcohol may be associated with the perpetuation of Ireland's current binge-drinking culture.

Advice for consumers

Ahead of tucking into an energy drink, make sure to carefully read the label to get a sense of the caffeine and sugar content, keeping in mind other sources of these substances in your diet.

Although EU labelling regulations now support the recommendation that energy drinks are not suitable for consumption by children, no specific age limit has been set out for product labelling. The onus, therefore, rests on parents to decide on a suitable age, bearing in mind *safe*food's recommendation that parents should restrict children under the age of 16 from consuming these drinks.

Despite being routinely marketed at sporting events, energy drinks should not be used for rehydration purposes following sport and it is recommended that those with any pre-existing heart condition avoid energy drinks altogether.

Finally, the consequences of using energy drinks as a mixer with alcohol in the context of Ireland's current binge-drinking culture, coupled with the unknown long term effects of consuming energy drinks in large quantities, has led health professionals to advise against this combination.

In Ireland, the marketing of energy drinks to younger, inexperienced consumers is largely unregulated and has been a frequently voiced concern. According to Dr Clodhna Foley-Nolan, Director of Human Health and Nutrition at *safe*food, an awareness campaign targeted specifically at young people, focusing on sugar content, caffeine content, and the risks of mixing alcohol or other mood-altering substances with energy drinks is something that needs to happen. In the meantime, it seems that, as with all things in life, when it comes to caffeine, sugar and energy drinks, moderation is the key.



FACTS ABOUT ENERGY DRINKS



PRODUCT	SERVING	SUGAR	CAFFEINE
Mountain Dew	500ml	66g	90mg
Monster Energy, Monster Assault	500ml	55g	160mg
Energise Edge	440ml	48g	140.8mg
Dart	250ml	28g	75mg
Red Bull Energy Drink, Red Bull Blue Edition Blueberry, Red Bull Red Edition Cranberry	250ml	27.5g	80mg
Tiger	250ml	27.5g	80mg
Relentless Origin	250ml	27g	80mg

PRODUCT	SERVING	SUGAR	CAFFEINE
Blue Bear	250ml	26.5g	75mg
Boost	250ml	26.5g	75mg
Red Thunder	250ml	26g	75mg
KX Energy	250ml	24.5g	80mg
Tesco Blue Spark	250ml	24.5g	75mg
Emerge	250ml	24.5g	75mg
Monster Rehab	500ml	11g	160mg

1 teaspoon = 4g sugar 1 cup of espresso = 80mg caffeine. Data collated March 2016.

CHECK BEFORE YOU CHOOSE



Energy drinks are not suitable:

- for children under 16 years of age
- for rehydration after sport or exercise
- as a mixer with alcohol.



The label has the facts

Compare the labels before you buy as many energy drinks contain high amounts of sugar and caffeine.

be **safe** be **healthy** be **well**



Unwrapping the packaging problem for older consumers

Packaged supermarket items such as tinned food, ready meals and toiletries are leaving older consumers feeling powerless and vulnerable, according to a recent study.



Report by Sarah Breathnach

At a glance

- Inaccessible packaging
- Key issues
- Possible solutions

As people get older, they reportedly value “that little bit of help” to enable them to maintain choice, control and dignity in their lives. Researchers at the University of Portsmouth have found that older consumers are experiencing difficulties with the packaging on certain everyday supermarket goods. As a result of these difficulties, older consumers are left with a sense of marketplace powerlessness and vulnerability that can negatively affect their self-worth. The study, which was published last month in the *Journal of Marketing Management*, observed and interviewed a cross-section of consumers aged between 59 and 85 living independently within the UK. While consumers of any age may encounter difficulties with packaging, the study’s findings fall in line with and develop upon previous research that has shown that age-related changes both biological and social may increase the likelihood of such incidents occurring for older people. Difficulties experienced with packaging on a range of common consumer goods

may not only put older consumers at risk of suffering embarrassment and frustration but could even cause potential illness and serious injury. We look at some of the main concerns relating to consumer goods packaging highlighted by this recent report and others, examining recommendations for how companies can better serve consumers.

Key issues

Labelling

Small font sizes on food packaging, particularly relating to nutritional information and cooking instructions, are a longstanding concern. As we grow older, visual deterioration makes it increasingly difficult for small font on packaging to be read. According to Bord Bia’s 2013 *Healthy Ageing* research, 88% of consumers look at the label on the food that they purchase, making legibility a “crucial factor”. The illegibility of cooking instructions, storage instructions, or ‘use-by’ dates raises a significant

issue for health and safety during food preparation. Illegible labelling poses a risk of food being inadequately prepared, potentially increasing the threat of consumers, particularly older age-groups, contracting food-borne illnesses. Visual deterioration may also increase susceptibility to being misled by unclear and deceptive imagery on packaging. These difficulties among others can then lead to embarrassment for older consumers, negatively affecting shopping experiences.

Product size

Due to a reduction in physical capabilities that older consumers may experience, smaller, lighter and more transportable goods tend to be favoured. Excessive packaging on everyday items makes them larger, bulkier and heavier to carry. A frustration concerning this was expressed by a number of participants who found that unnecessary packaging rendered certain items beyond their carrying capabilities.

The issue of inappropriate

apportionment was also raised. Portion sizes tended to be thought of as larger than required for one person or two people with diminishing appetites. Referring to the 'waste-not-want-not' attitude of their generation, participants raised concerns over the environmental impact of food wastage as a consequence of inappropriate portion sizes. According to Bord Bia, up to 45% of older people are undernourished. It is thought that inappropriate apportionment may be exacerbating 'ageing anorexia' and undernourishment among older people. The point was also made that, for some, excessive food portions served as a reminder of the negative aspects of the ageing process. One participant said: "I associate eating with family and my husband, so eating less reminds me that he's not around anymore".

Opening

Opening packaging is perhaps the biggest bugbear for older consumers. Reductions in strength and dexterity relating to biological ageing may affect abilities to open products. Plastic-wrapped multipacks of soap, for instance, were described by one participant aged 86 suffering from arthritis as "incredibly annoying" and "fiddly" due to difficulties with gripping the seal of the pack. In Ireland, approximately 915,000 people are living with arthritis - for those living with this condition, the likelihood of experiencing vulnerability when opening packs is particularly acute.

Glass jars, metal cans and plastic 'clamshell' packages can be especially difficult to open. Consequently, consumers find themselves resorting to the use of a variety of sharp objects such as scissors, knives, blades or implements like pliers and screwdrivers, which can - and do - result in injury. In the UK, a reported 67,000 visits are made to accident and emergency departments each year due to accidents with packaging.

It is thought that social ageing may compound difficulties related to biological ageing if an individual lives in isolation and has limited access to assistance. To avoid injury, those living in isolation or away from family and friends may have to establish supportive relationships with other individuals. For instance, one woman interviewed spoke of an arrangement she had made with her postman

who would open items that she left out on her doorstep for him. It was further reported that needing to call upon others for assistance causes dissatisfaction for consumers, which can negatively impact self-perception. As one participant aged 73 explained: "I've always been an independent person, so when I have to get my neighbour to help me open stuff because I'm too old and weak now it's quite embarrassing".

What is the answer?

Consumer vulnerability is viewed as situational, rather than a permanent condition. It is therefore argued that consumer vulnerability may be lessened or ameliorated through support from policy makers and changes within the packaging industry. Suggestions have been made as to how certain elements of packaging can be altered in order to aid older people in maintaining their independence.

Labelling

Improving the legibility of labels by enlarging the font is important in order to protect and deliver value to consumers. Distinctive packaging has also been highlighted as a way of making products more easily identifiable, helping the consumer to differentiate products on busy supermarket shelves.

Product size

Through the development of packaging that is smaller and lighter or through the inclusion of handles on particularly cumbersome goods, companies may be able to aid older consumers. It is thought that the provision of products serving smaller portions may also positively contribute to quality of life for older consumers. Re-sealable packaging does provide a possible solution for issues with apportionment. Nevertheless, dissatisfaction has been expressed towards current re-sealable packaging solutions. Reassessing the user friendliness of such packaging may be advised for companies wishing to make products more convenient for their customers.

Opening

'Easy opening' packaging is one way that companies can provide value for consumers. Many younger consumers also report experiencing issues with packaging. Bord Bia reported that 81% of older people and almost 60%

of those aged 25-34 said that 'easy to open' is an influencing factor when making a purchase. This indicates that revising packaging with the needs of older consumers in mind may add value for consumers in general while being in the industry's interest in terms of sales and brand loyalty. In an interview with *Which?*, inclusive packaging design expert Dr Alaster Yoxall, however, emphasised that products may be 'easy to open' but only if you know the technique and he noted that "as we get older we need more contrast between colours - such as a tab being clearly differentiated from its background". Products are also often hard to open because opening instructions cannot be seen, thus making clear and visible opening instructions and cues important elements of good design. When it comes to packaging accessibility, manufacturers must seek to find a balance between protecting children and facilitating older people. Liquid detergent capsules, for instance, present poisoning dangers to small children. Due to this, under recent EU regulations, manufacturers have had to ensure that stronger packaging is used on these products to make opening them more difficult for young children.

Inclusive design

Experts have warned about alienating older consumers with products clearly directed towards the senior market. According to researchers, one solution may be the inclusion of discreet symbols to highlight products as examples of 'inclusive design'. Manufacturers need to strike a balance between maintaining mass market appeal and, at the same time, communicating to older consumers the packaging's functional benefits.

It seems that with small changes to the packaging of everyday goods, companies can empower older consumers, providing "that little bit of help" they value.





Financing That New Car

 **REPORT** by *Róisín Moloney Weekes*

Consumer Choice reviews the car finance options available to consumers wishing to purchase a new car.

At a glance

- Personal loans
- Hire purchase
- Personal contract purchase

Purchasing a new car is a big investment and a financial decision that requires due consideration. How much do you want to spend? How much can you afford to repay monthly? What style of car will meet your needs? How much will the different car styles cost to run, maintain, insure and tax? How long do you intend to keep the car and what might it be worth when it comes to selling it or trading it in? By doing some research on car sales websites you can get an indication of the rate at which different cars depreciate.

When you do decide what car is right for you, the next consideration is how to pay for it. Of course, there are the savers out there who will not need to borrow to make this type of purchase but for most of us mere mortals some form of finance is required. Consumers generally choose either getting a personal loan from a bank or credit union or, secondly, arranging some kind of car finance in the form of hire purchase or personal contract purchasing. *Consumer Choice* looks at each of these financing routes in turn and outlines what consumers need to know to compare the options.

Personal loans

The most familiar option to consumers will be the personal loan and these include loans from the credit union or bank. Typically, such loans are taken over a repayment term of three-to-five years. Interest is charged on the amount you borrow from day one together

with the cost of the loan. The upside of this form of borrowing is that it is not tied to the purchase of a particular car and the borrower becomes the outright owner of the car from the day they purchase it. They can choose how the car will be maintained and are free to run up as much mileage as they wish. They have the option to change their mind at any point and sell the vehicle without being penalised. Remember, however, that despite the car being sold or kept the loan needs to be paid in full.

Personal contract purchase

An increasingly popular option being taken up by consumers is personal contract purchase (PCP), also known as private leasing. This is a contract between consumers and a finance company and typically lasts for three years. There are in broad terms three steps involved: a deposit is required to be paid, followed by monthly repayments over the terms of the agreement, and finally the agreement will end with a final payment known as a balloon payment if the consumer chooses to buy out the vehicle at the end of the term. The consumer may, however, choose to hand the car back to the finance company. We will now look at each of these steps in a little more detail.

The deposit

This can include a trade in and or cash. The more you pay down, the smaller the repayments over the term of the agreement

will be.

Payments

These are made monthly over the term of the agreement, which is generally a 36-month term. The usual expenses of running a car should be added to the monthly figure together with car insurance costs and car tax costs. An added expense includes the fact that this car must be serviced by a main dealer and the bill picked up by the consumer.

Restrictions

Numerous terms within the contract must be considered such as a mileage limit placed on consumers. Some limit drivers to 15,000 to 20,000 miles and any increase on this agreed limit will affect the final payment in the form of a penalty payment being added. Another mechanism for companies to add to the final payment is by penalising consumers for any damage during the term of the agreement.

The final payment

At this stage consumers decide whether they will keep the car and pay the final payment. They may arrange to pay this final payment over another agreed period of time through a subsequent finance agreement. When this final payment is made the car is owned by the consumer outright. Alternatively, the consumer can choose at the end of the initial agreement to return the car and make no further payments. Of course, this

will be subject to the car being returned in an agreeable state and with the complete service history, without which will cause a penalty payment. A final alternative option for consumers at the end of this payment period is to trade this car in against a new car. The condition of the car will be factored into the offer made and the agreed amount will determine the terms of the new agreement - and the consumer begins the cycle again.

It should also be noted that comprehensive insurance is compulsory with this option and, with the cost of motor insurance increasing so dramatically in recent times and set to further increase, the cost of comprehensive insurance may contribute significantly to the overall cost.

Hire purchase

Another option that may be more familiar to consumers is hire purchase. Similar to PCP, hire purchase agreements are contracts between finance companies and consumers. These contracts typically run over a three-to-five-year term with monthly repayments. In terms of ownership, the consumer does not own the car until the very final repayment is made. You cannot therefore decide to deal with the car in a manner you would your own car, such as decide to sell it, until the final repayment is made. Similar to a personal loan, the interest charged is capitalised to the amount you borrow from the outset and like a lease you must take out full comprehensive insurance.

The advantage of the hire purchase agreement is that you can return the car and terminate your agreement using the 'half rule'. The Credit Consumer Act 1995 affects the contract between consumers and hire purchase finance companies and allows consumers to cancel the agreement by giving notice in writing of their intention to the company. At the stage of signing the contract, the hire purchase finance company must show you what the half way figure would be for your contract. Consumers should be aware that in this situation you will be responsible for the costs of any repairs required and so may want to make such repairs before returning the car. Returning the car at the half way point will mean all payments made to that point will have been lost.

What is important to consider here is how likely a change in circumstances will be. For example, do you envisage beginning or expanding your family and if so will your vehicle of choice facilitate this? How secure is your job? How likely is a move? Would your car of choice suit a longer commute? Do you see yourself possibly emigrating in the term of the agreement?

TABLE 1: CONDITIONS COMPARED

Form of finance	Ownership	Car maintenance	Car insurance
Personal loan	Consumer owns vehicle from outset	Consumer's choice	Consumer's choice
PCP	Consumer has option to buy out the vehicle at the end of the agreement	Must be serviced by main dealer and paid for by consumer	Comprehensive insurance required
Hire purchase	Consumer does not own vehicle until the very last payment is made	Consumer's choice	Comprehensive insurance required

Making a decision

Consumers are warned that in this industry shopping around is paramount. There is a need to read agreements and to remember that no two agreements are the same. When comparing hire purchase and leasing agreements with personal loans, consumers must be aware that it is not as simple as comparing the APR. Unfortunately, the APR does not have to be shown as part of these finance agreements. Instead consumers must compare the total amount of interest and costs throughout the agreement and compare this figure with the overall cost of a personal loan.

Additional charges should also be included when calculating the total costs and some of the most common fees and charges contained in finance agreements include:

- A documentation fee, which is a fee for setting up the agreement.
- Interest surcharge for missed repayments, which means a higher rate of interest may be charged on any repayments missed.
- A penalty fee for missed repayments, which is charged for missed or late payments in addition to the interest surcharge.

- A completion fee, which is a fee charged to end the agreement and to allow ownership of the vehicle pass to the consumer.

- A rescheduling charge – this can be applicable if the lender agrees to change the terms of the agreement.

Another consideration for consumers to be aware of is their credit rating. As with other forms of credit, a hire purchase agreement or leasing agreement will impact on your credit rating. Just like a personal loan from a bank, the lender will send details of the repayments you make to a credit reference agency. If you use a guarantor to secure this agreement, any blemish arising from non-payment or late payment associated with this agreement may impact on you and your guarantor's credit rating.

While leasing options and hire purchase options can offer great value for money, consumers must be aware that contracts differ and time must be taken to understand the agreement being entered into. Depending on your lifestyle and your expectations for the medium term, you just may be able to take advantage of the current offers available on the market but costs and restrictions must be taken into account.

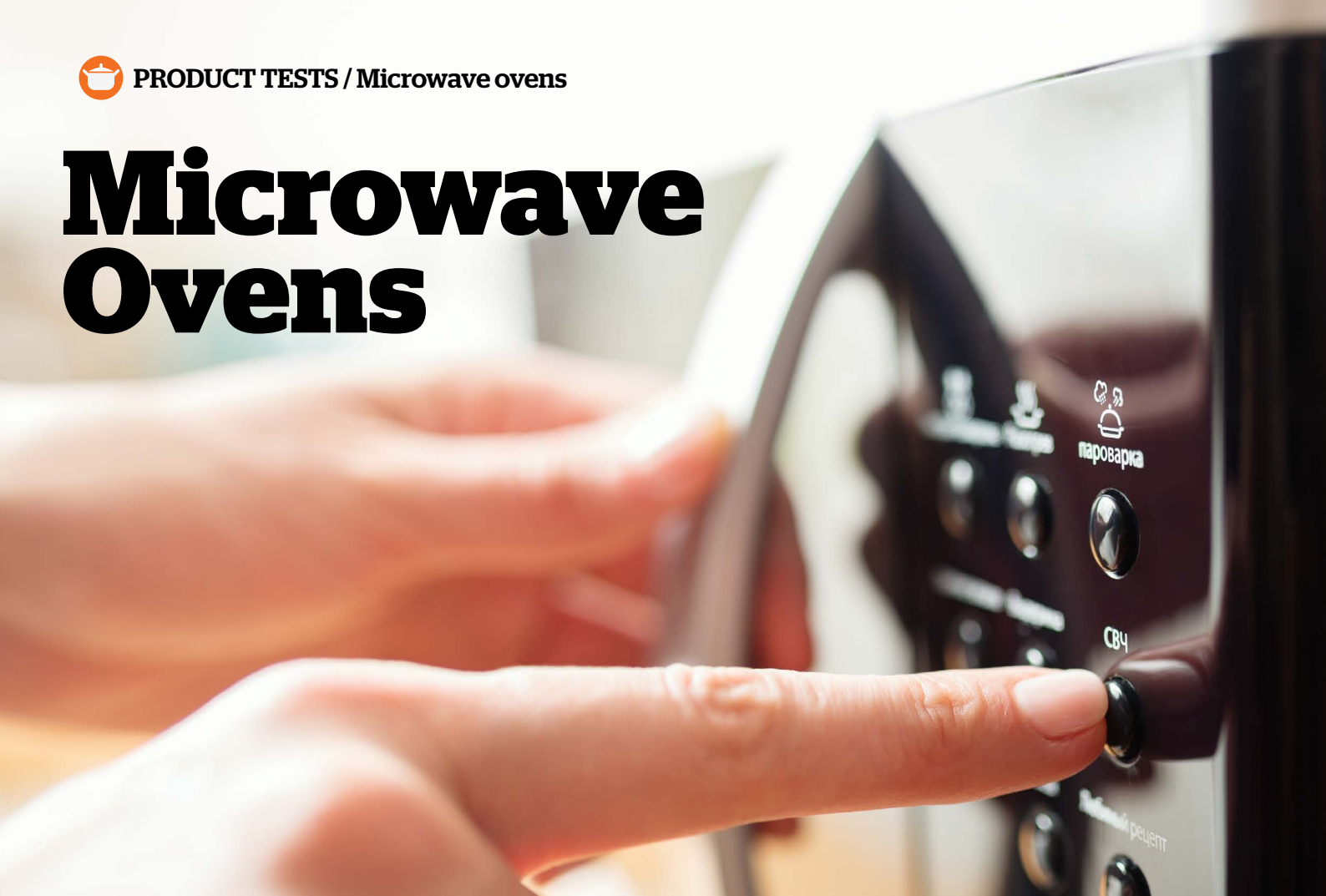
WHAT IS APR?

The Annual Percentage Rate (APR) is a calculation of the overall cost of your loan. It is expressed as an annual rate that represents the actual yearly cost of the funds borrowed. It takes into account all the costs during the term of the loan including any set up charges and the interest rate. This means that fees and charges are added to the loan amount before interest is calculated.

APR is calculated each year on the declining principal of a loan. The declining principal is the amount you still owe, not the original amount you borrowed. The higher the APR the more it will cost you to borrow money.

All lenders are required to quote the interest rate on a loan or credit card as an APR. You can use the APR to compare loans as long as they are for the same amount and the same term. For example, a loan with an APR of 15% is more expensive than one with an APR of 11%. You cannot use APR to compare loans of different terms.

Microwave Ovens



From microwave ovens that focus on the basics of heating and defrosting to combination devices that also let you grill and even bake, Consumer Choice serves up a range of great appliances.



REPORT by Clodagh O'Donoghue

At a glance

- **Microwaving benefits**
- **Safety issues**
- **Previous Choice Buys**
- **Three new Choice Buys**

Microwave ovens in our current batch fall into two categories – solo devices that cook, heat and thaw food and combination devices that can also work as a convection oven with an integrated grill to enable browning. Also on the market are grill microwaves that have an integrated top heating element so you can choose whether to microwave food or grill it – but these machines do not have a convection oven option and there are no examples among our current Choice Buys.

Many are happy to stick with a solo microwave that they use when a spot of fast cooking is required, when yesterday's leftovers need reheating or when they have left it too late to let dinner defrost naturally and they need to speed up the process. Solo microwaves are often less expensive than combination devices – though several of our Choice Buys are on the pricier end due to the range of added features they provide.

Combination microwave ovens are multitasking devices that can be used for microwaving but that also can perform in the same way as a normal convection oven – allowing you to roast a chicken, bake a cake, or cook a pizza. The best ones will perform these tasks as well as a standard

convection oven but much more quickly and often combination machines offer a number of pre-set automatic programmes for different meals and foodstuffs to help take the guesswork out of preparing dishes. Combination machines can be particularly handy when space is too tight to fit a full-sized oven – for example in a studio apartment, caravan or holiday home – or for those who feel they occasionally need more than one oven when doing a lot of catering.

Microwaving benefits

As well as being a speedy cooking option for those in a hurry, microwave cooking is often cited as an energy-efficient method of preparing food. Microwave ovens work by generating very high-frequency radio waves that penetrate the surface of the food and that cause the water molecules inside the food to vibrate, producing heat that then cooks the food. This is why foods that are high in water content, like fresh vegetables, can be cooked faster than other foods. Microwave cooking can be significantly more energy efficient than conventional cooking due to the shorter cooking times and the fact that the energy heats only the food and not the whole oven

compartment, the containers used or the surrounding air. Using the microwave is particularly energy efficient compared with conventional cookers when dealing with small portions or reheating leftovers. In addition, many newer models offer energy-saving features, such as variable power settings, eco modes to reduce power usage when the machine is on standby and sensors that gauge moisture content in food and can detect when it is properly cooked to avoid overcooking.

Not only is using the microwave fast, convenient and frugal in terms of energy consumption, it can also be a healthy way to cook. As long as you don't overcook them, foods prepared in a microwave may retain more of their vitamins and minerals than those cooked conventionally because microwave ovens cook more quickly, using very little water. Some microwave ovens come with a vegetable steamer supplied, offering a swift and healthy way to cook vegetables – or one can be bought separately.

Safety issues

In the past, concerns have been raised over the possibility of radiation harmful to human health emanating from microwave ovens. Much debate has surrounded this notion but the prevailing wisdom – from the World Health Organisation, cancer research organisations, and food safety authorities in Europe and worldwide, among others - is that a microwave oven in good condition is perfectly safe to use in the home. Although microwave ovens produce radiation to heat food, they do not make foods radioactive or contaminate them in any way – in fact, microwaves do not make any changes to food that are not made by any other cooking method. In addition, legislative limits are placed on the amount of microwaves that can leak from an appliance throughout its lifetime – and these limits are far below the level that is known to harm people. Standards also require that these appliances have locking systems that stop the production of microwaves the instant the door is opened. Repeated tests have shown little or no detectable leakage of radiation from microwave ovens and microwave energy also decreases significantly as you move away from the source of the radiation, so those who remain concerned can simply stand back from the microwave while it is operating. Other sensible precautions to take are to avoid operating a microwave oven if the door does not close firmly or is bent, warped or damaged in any way and to never use a microwave oven if you have reason to believe that it will continue to operate with the door open.

Safety issues that have been associated with microwave ovens have, in general, been injuries that could have happened with any oven or cooking surface, such as burns from hot dishes or steam released from food. One potential danger of microwave ovens, however, is the risk of scalding from overheated water. Normally when water is boiled, bubbles are formed that cool the water down but when plain water (without, for example, instant coffee added to it) is heated for too long in a clean glass or ceramic container, bubbles can be prevented from forming and the water becomes 'super-heated' past its boiling point. When this water is then moved or something is dropped into it, the surface is disturbed, the heat releases violently, and boiling water erupts out of the container, potentially causing injury. You can avoid this risk by ensuring that water is only heated for the minimum amount of time necessary or by placing a wooden stirrer or cocktail stick in the water before popping it into the microwave.

Previous Choice Buys

Of the ten Choice Buy microwave ovens we examined last time we looked at this category in April 2014, six remain readily available in shops. Three of these are solo microwave ovens that concentrate on performing the basic tasks of heating and defrosting to a very high standard. The Panasonic NN-ST479S, the Panasonic NN-SD271S, and the Ikea Husalla all deliver speedy cooking, with the heat distributed evenly so there are no cool spots, as well as effective defrosting on both manual and auto-defrost settings. Priced recently at €190, the Panasonic NN-ST479S is a particularly roomy appliance, spacious enough to accommodate large dinner plates, and, in all, it offers 18 automatic programmes for cooking, defrosting and reheating. Not quite as spacious is the Panasonic NN-SD271S (€170), which offers ten easy-to-use automatic programmes as well as a handy multi-stage cooking option, so you can set the microwave to defrost your meal and then cook it at a different power level without having to return to the device until the entire process is completed. Whereas both the Panasonic ovens are freestanding devices that can sit on your countertop, the Ikea Husalla is a built-in microwave

that can be integrated into a fitted kitchen. Priced at €300, the Ikea appliance has a roomy interior and the door opens wide for ease of lifting items in and out, though its stainless steel front may take a bit of effort to keep clean.

Also still available are three combination microwave ovens that we recommended in our last report. For those who want their microwave oven to do more than heat and defrost, the Whirlpool JT369, the Panasonic NN-CT562M, and the Sharp R-959SLM all offer convection oven and grilling options that deliver very good results. These are relatively pricey appliances – currently costing between

€300 and €350 – but you get plenty of features and versatility for your money as well as high-standard

performance. The Whirlpool JT369 has a door that opens downwards and is easy to see through, so you can keep an eye on what you are cooking, and its catalytic back wall is aimed at making cleaning easier.

The Panasonic NN-CT562M offers plenty of automatic programmes and both these and recommended manual settings work very well. Though

it is touted as being a slimline appliance, it is not noticeably smaller than many other Choice Buys and has plenty of room inside.

The Sharp R-959SLM is a sizeable device that will take up a fair amount of space on your countertop but its generous proportions mean you can prepare large quantities in one go and it even offers two shelves so you can cook more than one dish at a time. Other features include eight automatic programmes, five power levels and express-cook and express-defrost settings. For full reviews of these microwave ovens, see page 15 of the April 2014 issue of *Consumer Choice*.





1. Samsung MS28J5255 €218 (Solo microwave)

The **Choice Buy** Samsung MS28J5255 performs the basic microwave functions of heating and defrosting excellently and it comes with plenty of novel and potentially handy features. The Samsung MS28J5255 cooks food swiftly and, unlike many other microwave ovens, it does not lose power when used continuously, so it remains speedy even if you have to cook a number of items in quick succession. In addition, it is great at reheating dishes evenly and the defrosting function is gentle yet thorough, with four effective auto-defrost programmes. In all, there are 28 programmes to choose from to help you prepare a wide range of foodstuffs; a steamer comes supplied for a healthier cooking option; and a deodorisation feature is aimed at removing any unpleasant smells that may lurk behind when the cooking is done. You will be able to fit a dinner plate with a diameter of up to 32cm inside this roomy appliance and you can disable the turntable to accommodate larger square or rectangular dishes.

Speed of heating

★★★★★

Evenness of heating

★★★★★

Manual defrosting

★★★★★

Ease of use

★★★★★



2. Samsung MS23H3125AK €170 (Solo microwave)

Another solo microwave oven, the **Choice Buy** Samsung MS23H3125AK does not offer grilling or baking options but it focuses instead on doing the basics extremely well and throwing in a range of added features. This is a fairly spacious appliance that does a great job of defrosting, especially on the manual setting, and food is cooked evenly without getting dried out. Those who are uncertain about timings can choose from 15 pre-set cook options, and if you are cooking a number of items one after the other, you will be able to rely on this microwave oven to not lose power as it works. Beyond the basics, the Samsung MS23H3125AK offers features that include an eco mode to reduce energy usage, a deodorisation function to get rid of any nasty left-over cooking smells, and an antibacterial and scratch-resistant ceramic interior that testers found was easy to clean. The glass on the door is a little dark for viewing your food as it cooks but that is a minor quibble.

Speed of heating

★★★★★

Evenness of heating

★★★★★

Manual defrosting

★★★★★

Ease of use

★★★★★



3. Samsung MC28H5013AK €190 (Combination microwave)

Those who are looking for a microwave that can multitask might like to consider the **Choice Buy** Samsung MC28H5013AK. This appliance is great at heating food evenly and defrosting it effectively – and it will maintain its power levels even if it is used continuously for a period. In addition, this combination microwave oven may be used for baking and the integrated grill can be used for toasting or browning purposes – and it performed these tasks to a high level in tests. The roomy interior can accommodate larger plates and you can disable the turntable if you want to pop in a rectangular casserole dish, for example, and make use of every inch of space. The plethora of features on this appliance include an eco mode to reduce standby power usage, a deodorisation setting and even a fermentation function that allows you to prove dough or make your own yoghurt. In addition, this microwave oven is fairly simple to use and easy to clean.

Speed of heating

★★★★★

Evenness of heating

★★★★★

Manual defrosting

★★★★★

Ease of use

★★★★★

Grilling

★★★★★

Baking

★★★★★



Televisions

 **REPORT by Clodagh O'Donoghue**

At a glance

- Ultra-HD
- Curved screens
- 11 Choice Buys

Seeing the bigger picture - TVs today continue to increase in size and resolution. *Consumer Choice* looks at the move to ultra-high definition and views 11 Choice Buys.

The TV market has developed rapidly over the last few years. Not so long ago, high-definition or HD was the buzzword in the sector, with our tests noting the benefits of newer TVs that were HD-ready or that offered full HD – a huge step up from the resolution and detail delivered by standard-definition TV sets. Last year, when we examined the TV category, we saw the emergence in the market of a small number of ultra-HD TVs capable of showing 4K content – up to four times the resolution of mere HD. This year, more than half the TVs in our very sizeable batch – and all of our Choice Buys – offer ultra-HD resolution, demonstrating the speed at which this market evolves.

In addition, whereas a few years back a 32-inch TV was standard for a family-sized room, now screen sizes have grown to such an extent that 32 inches looks fairly puny and consumers are favouring models that measure 40 inches or more. Although our current batch is focused on TVs that measure up to 55 inches, there are many examples of larger models on the market, stretching to 65, 75 and even 85 inches. And with the newer screens and higher resolution,

you do not need to sit so far back from the TV for the optimum viewing experience. This means that you can afford to opt for a size or two bigger than you might have in the past – and consumers are doing so in their droves.

And, of course, TVs are now smart devices with almost all models on test boasting built-in wi-fi, enabling you to download apps to your TV as you would to a smartphone, stream media and on-demand television from sources such as Netflix and browse the internet. The different manufacturers offer different operating systems similar to those found in computers or smartphones for running the smart features on their TVs and they are including powerful processors in their models to keep everything zipping along at a speedy pace.

Ultra-HD

Over half the TVs in our current batch offer ultra-HD – also known as 4K, UHD and 4K UHD – and providing impressive 3840 x 2160 resolution or four times the pixels of HD TVs. Ultra-HD sets tend to have screen sizes of 40 inches or more, as the extra detail in the picture can only really be appreciated on

a larger display. You can purchase a 4K set from upwards of €700 and, at its best, this higher resolution will deliver extraordinary detail and superb clarity so that images seem almost three dimensional. There is still a problem accessing content to fully show off this capability, though those with 4K camcorders might be keen to play their footage in all its glory and there may be 4K content available to be streamed through Netflix or via YouTube for those who have sufficient broadband speeds. In addition, blu-ray and DVD players with the ability to upscale normal discs to near-4K quality are emerging on the market and 4K TV channels are slowly coming on stream. Thus, although the amount of 4K content may be limited currently, this is likely to grow rapidly in the next few years and you may consider it worthwhile to future proof your TV for when this higher resolution becomes the norm by opting for an ultra-HD model now.

Beyond ultra-HD, manufacturers are pushing picture quality in other ways. Samsung is touting its new 4K SUHD series of TVs that use 'nano crystal' technology – a version of quantum dot technology – that the

manufacturer claims boosts colour vibrancy and differentiation for a “brighter, more true-to-life” picture. Meanwhile, LG is focusing on OLED (organic light-emitting diode) technology for its more high-end offerings. Whereas LED TVs incorporate a large number of tiny lights that backlight the screen, OLED TVs do not need a backlight, so they can be even slimmer than LED TVs and each organic cell creates its own light source, helping to produce a more vibrant picture with deeper blacks, greater contrasts, reduced blurring during fast-action scenes and much improved viewing angles.

Embracing the curves?

Another innovation that seemed almost futuristic a couple of years ago and that made a tentative appearance in our tests last year, curved screens are now becoming more common, with around a quarter of our current batch sporting concave displays. The idea behind the gentle curve is that it will provide a more immersive cinematic experience for users but testers have not

always found the viewing experience to be greatly enhanced over flat-screen devices with otherwise identical specifications. There can be also downsides to the curvature, with viewing angles likely to suffer significantly. With a lot of these TVs, you will need to sit directly in front of them to obtain the best view whereas for anyone positioned off to the side slightly, there will be some fading. As a result, curved screens may not currently be

the ideal choice for a family sitting room where there might be several people watching the TV at once – as some members of the group may be getting a significantly better view than others. Reflections can also be a problem with these screens, with users noting some unusual stretching and distorting of bright objects reflected in a curved screen compared with a flat screen.

TV shopping

Although we have reported on only one size of each TV model in order to avoid repetition on our table below, most models come in a range of sizes that are readily available on the Irish market. In general, the different sized versions of the same model performed similarly in our tests – so, if you like the sound of one device but the size does not suit, you may well be able to find a smaller or larger version.

In addition, make sure to shop around if you are buying a new TV as we found significant disparity in pricing between retailers and often promotions or discounts may be available on slightly older models as the TV market moves quickly.



1. Samsung UE55JS9000 €2,999

The **Choice Buy** Samsung UE55JS900 has a huge price to match its very sizeable 55-inch screen but it offers exceptional quality and an extensive range of high-end features. With resolution of 3840 x 2160, this TV is one of the manufacturer's 4K SUHD devices and provides outstandingly detailed pictures on its curved screen, which is more than matched by the superb sound quality on offer – though testers noted that viewing angles are a little narrow. Those interested in viewing 3D content will be impressed with the television's capabilities and the built-in wi-fi allows for access to the internet and an array of excellent smart TV features running on Samsung's Tizen operating system. A second remote control is provided for navigating the smart TV service – though both the remote and the overall service might take a bit of getting used to. A slightly smaller though still very substantial 48-inch version – the Samsung UE48JS9000 – is also available and scored equally highly in tests.

2. LG 55UF950V €3,300

The **Choice Buy** LG 55UF950V is another pricey, big-screen device that delivers stunning picture quality and plenty of features for your money. The 3840 x 2160 resolution makes for impressively sharp and detailed images and sound quality is superb to further enhance the viewing experience. An added bonus is the wide viewing angle that means that large groups can watch the 55-inch screen without those at the edges being short-changed in terms of what they can see. Also excellent is the 3D performance of this TV and PVR functionality is available if you add USB storage, letting you record and pause live TV programmes. The integrated wi-fi lets you access the Internet and LG's webOS-based smart TV system that may be navigated using the manufacturer's 'Magic Remote' control, which testers found fairly straightforward and intuitive to use and which includes a handy pointer for clicking on apps and icons on the screen.



3. Samsung UE48JU7500 €1,699

The **Choice Buy** Samsung UE48JU7500 offers 3840 x 2160 resolution on its 48-inch curved screen, providing superbly sharp and bright images both with 4K ultra-HD content and the more ubiquitous HD content. Audio quality is also great, with a full and rich sound, and this device's active 3D technology does a great job of showing 3D content. Testers were not impressed by the viewing angle, however, which they found to be fairly narrow, with pictures fading when viewed from the side. This TV is straightforward to use, with menus that are intuitive to navigate via the standard remote control. A second 'Smart Touch' remote facilitates navigation around the TV's smart features, run on Samsung's Tizen operating system, with everything zipping along speedily thanks to the device's quad-core processor. By connecting USB storage, you can access this TV's PVR functionality that enables you to pause and rewind live programmes and even lets you record one programme while watching another.



4. LG 55UG870V €1,799

The **Choice Buy** LG 55UG870V is again a very large device for those who have the space in their homes and it will deliver an excellent viewing experience on its 55-inch curved screen. This ultra-HD TV offers 3840 x 2160 resolution and provides stunningly sharp images both when displaying 4K and HD content. Audio quality is equally good, with a pleasantly balanced, rich sound – and, for those who have a 3D blu-ray player, this device is superb at showing 3D content using passive technology. Through the built-in wi-fi, you can access the internet and LG's webOS smart TV, which is well designed though it may take a bit of getting used to initially. The manufacturer's 'Magic Remote' can be used for navigating everyday features as well as the smart TV features and is intuitive to use, though testers found that the menus could be more clearly structured and were a little slow to load.



5. Samsung UE55JU6500 €1,400

The lowest-priced of our current 55-inch TV sets, the **Choice Buy** Samsung UE55JU6500 gives you a sizeable device with lots of high-end and handy features. The curved screen particularly impresses when displaying 4K content, which may be accessed through Netflix streaming or other sources, though the more familiar HD and standard-definition content will also look well. The sound delivered is also pretty good to further enhance the viewing experience – though the viewing angle on this device is a little narrow. Samsung's excellent range of smart TV features may be accessed via the integrated wi-fi and are run on the manufacturer's Tizen operating system. Navigation of smart TV features is aided by the 'Smart Touch' remote, which comes supplied along with the easy-to-use standard remote for more everyday tasks. If you like the sound of this TV but simply do not have the space, a much smaller 40-inch version similarly impressed our testers and is available for €899.



6. LG 55EG920V €3,363

The most expensive TV in our current batch, the **Choice Buy** LG 55EG920V offers a full range of high-end features for your money. Not only does this ultra-HD device have the ability to show 4K content but this is an OLED TV that differs from backlit LED TVs by providing pixels that each creates its own light source, with the effect of producing more vibrant images with deeper blacks, greater contrasts and smooth and steady motion. OLED TVs can be ultra thin but the audio quality on the LG 55EG920V does not suffer, delivering rich pleasing sound to match the superb image quality, with equally impressive performance whether it is showing 4K, HD, standard-definition or even 3D content. Testers found some ease-of-use issues with onscreen menus slow to load and not always intuitive to navigate but this TV provides a good choice of connectors and built-in wi-fi enables access to LG's webOS smart TV features, web browser and app store.



7. Samsung UE48JS8500 €1,999

With the **Choice Buy** Samsung UE48JS8500, the manufacturer seems to have thrown all the high-end features it can think of into one device. From Samsung's SUHD range, this TV not only offers the ability to display 4K content, but it also boasts 'nano crystal' technology that is claimed to increase the vibrancy and contrast of colours on the screen and indeed, image quality was found to be excellent in tests, though the viewing angle could be wider. Sound quality is very decent; 3D performance is great; and Samsung's first-rate range of smart TV features can be accessed through the built-in wi-fi. Those who like to multitask can use one half of the screen as a web browser and the other to watch TV and adding USB storage enables PVR functionality, allowing you to pause and rewind live programming as well as watch one show while recording another. If 48 inches is simply too teeny for your needs, the 55-inch version is similarly excellent and is priced at €2,300.



19. Samsung UE40JU6400 €840

Coming down considerably in size and price, the **Choice Buy** Samsung UE40JU6400 offers 3840 x 2160 resolution for incredibly sharp images on its 40-inch flat screen. Sound quality is also very good to enhance the overall viewing experience and, with quite a wide viewing angle, all members of the family can watch at once. In general, this is an easy-to-use TV and, with four HDMI and three USB sockets, you will be able to attach a range of accessories and devices, including USB storage to enable PVR functionality. Samsung's excellent smart TV features run on the Tizen operating system and the quad-core processor means that everything moves along swiftly. However, with no second remote control supplied, the smart TV features must be navigated via the TV's standard remote, which can be awkward and tedious. For those looking for a significantly larger device, this model may be found in shops in 48-inch, 50-inch, 55-inch and even 60-inch versions, with prices ranging from €930 to €1,999.



20. Samsung UE40JU7000 €1,299

The **Choice Buy** Samsung UE40JU7000 comes from the manufacturer's 7 Series and is an excellent all-rounder. Image quality is wonderfully sharp when displaying 4K content on the 40-inch flat screen, but HD pictures are also impressively detailed and are matched by high-quality audio. Fans of 3D content will be very pleased with the performance of this TV and overall, this device is intuitive to use with a handy separate connections box - present on many of our Choice Buy Samsung TVs - that houses four HDMI and three USB ports for more convenient access and a more streamlined look. Adding USB storage allows you to use the PVR features that include the ability to record one programme while watching another, and a second smart remote control facilitates navigation of the smart TV features, though these do take a bit of getting used to. Those in need of a bigger screen can opt for the 48-inch or 55-inch versions, priced at €1,830 and €1,999, respectively.



21. Samsung UE40JU6510 €1,399

Again sporting ultra-HD, the **Choice Buy** Samsung UE40JU6510 does a great job of showing 4K content but HD programming also looks very well on the 40-inch curved screen. Unlike some other Samsung Choice Buys, testers found that this TV has a decent viewing angle, so groups will be able to watch together with equal enjoyment for those positioned in the centre and those sitting to the side slightly. Although you will not be able to watch 3D programming, this TV offers the manufacturer's excellent range of smart TV features, run on Samsung's new Tizen system and powered by a powerful quad-core processor for speedy operation. A second remote control helps with the navigation of the smart features with a pointer similar to a computer mouse cursor that lets you click on apps and icons on the screen. Towards the other end of the size scale, this Samsung model also comes with a 55-inch screen and is priced at €1,799.



22. Samsung UE40JU6740 €1,299

Another TV from Samsung's mid-range 6 Series, the **Choice Buy** Samsung UE40JU6740 sports 3840 x 2160 resolution for ultra-HD viewing of 4K content and the super-sharp detail translates well into HD and standard-definition for great image quality across the board. The viewing angle could be better on the 40-inch curved screen, but sound quality is very good indeed, adding to the viewing experience. Overall, this is an easy-to-use TV with a fairly intuitive and simple standard remote control, and the option to enable PVR functionality by adding USB storage allows for pausing and rewinding of live TV. As with the other Samsung TVs currently on test, the smart TV features could be better explained initially but they work very well once you get used to them and the second 'Smart Touch' remote that comes supplied facilitates navigation. Almost identical to the UE40JU6740, the Samsung UE40JU6670 is priced at €1,099 - and those looking to size up can get the JU6740 model in 48-inch and 55-inch versions.

MODEL		SPECIFICATIONS							TEST PERFORMANCE									SCORE %
		Price (€)	Screen size (inches)	Screen resolution (pixels)	Internet (full browser)	Wi-fi integrated	3D	Number of HDMI /USB ports	Image quality (40%)	Sound quality (25%)	Ease of use (10%)	Smart TV (on-line content) (5%)	Connections and tuners (5%)	Energy efficiency (5%)	Using as a multi-media player (5%)	Using as a re-corder (5%)	3D performance (0%)	
46-55 inch																		
1	Samsung UE55JS9000	2,999	55	3840 x 2160	✓	✓	✓ active	4/3	★★★★	★★★★★	★★★★	★★★★	★★★★★	★★★	★★★★★	★★★★	★★★★★	77
2	LG 55UF950V	3,300	55	3840 x 2160	✓	✓	✓ passive	4/3	★★★★	★★★★★	★★★★	★★★	★★★★★	★★★★	★★★★★	★★★★	★★★★★	77
3	Samsung UE48JU7500	1,699	48	3840 x 2160	✓	✓	✓ active	4/3	★★★★	★★★★	★★★★	★★★	★★★★★	★★★	★★★★★	★★★★	★★★★	75
4	LG 55UG870V	1,799	55	3840 x 2160	✓	✓	✓ passive	4/3	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	★★★★★	74
5	Samsung UE55JU6500	1,400	55	3840 x 2160	✓	✓		4/3	★★★★	★★★★	★★★★	★★★★	★★★★★	★★★★	★★★★★	★★★★	na	74
6	LG 55EG920V	3,363	55	3840 x 2160	✓	✓	✓ passive	4/3	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	★★★★★	73
7	Samsung UE48JS8500	1,999	48	3840 x 2160	✓	✓	✓ active	4/3	★★★★	★★★★	★★★★	★★★★	★★★★★	★★★	★★★★★	★★★★	★★★★	72
8	Samsung UE48JU6000	949	48	3840 x 2160	✓	✓		3/2	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	na	68
9	Samsung UE50J5500	750	50	1920 x 1080	✓	✓		3/2	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	na	67
10	Samsung UE50JU6800	1,049	50	3840 x 2160	✓	✓		4/3	★★★★	★★★★	★★★★	★★★	★★★★★	★★★	★★★★★	★★★★	na	67
11	Sony KD-55X8507C	1,649	55	3840 x 2160	✓	✓	✓ active	4/3	★★★★	★★★★	★★★	★★★	★★★★★	★★★★	★★★★	na	★★★★	66
12	Sony KDL-50W809C	999	50	1920 x 1080	✓	✓	✓ active	4/3	★★★★	★★★	★★★	★★★	★★★★★	★★★★	★★★★	na	★★★★	64
13	LG 50LF652V	849	50	1920 x 1080	✓	✓	✓ passive	3/3	★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	★★★★★	64
14	LG 49UF850V	1,199	49	3840 x 2160	✓	✓	✓ passive	3/3	★★★★	★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	★★★★	62
15	LG 49UF675V	969	49	3840 x 2160				2/1	★★★	★★★	★★★	na	★★★	★★★★	★★★	★★★★	na	58
16	Sony KD-55X9005C	2,649	55	3840 x 2160	✓	✓	✓ passive	4/3	★★★★	★★★	★★★	★★★	★★★★★	★★★	★★★★	na	★★★★★	58
17	Panasonic TX-55CR852B	2,199	55	3840 x 2160	✓	✓	✓ active	3/3	★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★	56
18	Philips 49PUT4900	729	49	3840 x 2160				3/2	★★★	★★★	★★★	na	★★★★	★★★	★★★★★	★★★★	na	53
40-43 inch																		
19	Samsung UE40JU6400	840	40	3840 x 2160	✓	✓		4/3	★★★★	★★★★	★★★★	★★★	★★★★★	★★★	★★★★★	★★★★	na	73
20	Samsung UE40JU7000	1,299	40	3840 x 2160	✓	✓	✓ active	4/3	★★★★	★★★★	★★★★	★★★★	★★★★★	★★★	★★★★★	★★★★	★★★★	72
21	Samsung UE40JU6510	1,399	40	3840 x 2160	✓	✓		4/3	★★★★	★★★★	★★★★	★★★	★★★★★	★★★	★★★★★	★★★★	na	71
22	Samsung UE40JU6740	1,299	40	3840 x 2160	✓	✓		4/3	★★★★	★★★★	★★★★	★★★★	★★★★★	★★★	★★★★★	★★★★	na	71
23	LG 40UF770V	799	40	3840 x 2160	✓	✓		3/3	★★★★	★★★	★★★★	★★★	★★★★	★★★	★★★★★	★★★★	na	68
24	LG 42LF580V	600	42	1920 x 1080	✓	✓		3/3	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	na	66
25	Sony KDL-43W807C	749	43	1920 x 1080	✓	✓	✓ active	4/3	★★★★	★★★★	★★★	★★★	★★★★★	★★★★	★★★★	na	★★★★	65
26	Sony KDL-43W756C	711	43	1920 x 1080	✓	✓		4/3	★★★★	★★★	★★★	★★★	★★★★★	★★★★	★★★★	na	na	65
27	Panasonic TX-40CX700	999	40	3840 x 2160	✓	✓	✓ active	3/3	★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★	62
28	Panasonic TX-40CX680	919	40	3840 x 2160	✓	✓		3/3	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	na	na	62
29	Panasonic TX-40CS520	580	40	1920 x 1080	✓	✓		2/1	★★★	★★★	★★★	★★★★	★★★★	★★★★★	★★★★	★★★★★	na	61
30	Sony KDL-40R453C	439	40	1920 x 1080				2/1	★★★	★★★	★★★	na	★★★	★★★★	★★★★★	★★★	na	57
31	LG 43LF540V	439	43	1920 x 1080				2/1	★★★	★★★	★★★	na	★★★	★★★★★	★★★★★	★★★	na	56
32 inch																		
32	LG 32LF650V	430	32	1920 x 1080	✓	✓	✓ passive	3/3	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	★★★★★	68
33	Samsung UE32J6300	482	32	1920 x 1080	✓	✓		4/3	★★★★	★★★★	★★★★	★★★	★★★★★	★★★	★★★★★	★★★★	na	67
34	LG 32LF630V	499	32	1920 x 1080	✓	✓		3/3	★★★★	★★★	★★★★	★★★	★★★★	★★★★	★★★★★	★★★★	na	65
35	LG 32LF561V	420	32	1920 x 1080				2/1	★★★★	★★★	★★★	na	★★★	★★★★	★★★★★	★★★	na	63
36	Samsung UE32J5100	339	32	1920 x 1080				2/1	★★★★	★★★	★★★★	na	★★★	★★★	★★★★	na	na	60
37	Sony KDL-32R503C	479	32	1366 x 768		✓		2/2	★★★	★★★	★★★	★★	★★★★	★★★★	★★★★	★★★	na	55
38	Philips 32PFT5500	450	32	1920 x 1080	✓	✓		4/3	★★★	★★	★★★	★★★	★★★★★	★★★★	★★★★★	★★★★	na	54
39	Panasonic TX-32CS510	429	32	1366 x 768	✓	✓		2/1	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★★	na	54
40	Sony KDL-32R403C	349	32	1366 x 768				2/1	★★★	★★	★★★	na	★★★	★★★★	★★★★★	★★★	na	50

USING THE TABLE

Star ratings are out of five.

SPECIFICATIONS

Price: Typical retailer’s price if you shop around.

Screen size: The diagonal of the television screen measured in inches. The size of the actual television frame may be slightly larger. Most of the models on test are available in a range of sizes but we have only included one sample size on our table to avoid repetition.

3D: With active shutter glasses, electronic shutters sync the eyes to two different pictures on the screen to create a 3D effect, whereas passive glasses use polarised lenses to separate the pictures to direct them to each eye.

Number of HDMI/USB ports: HDMI sockets are used for connecting HD equipment, such as blu-ray players and set-top boxes, and USB ports are used for connecting USB devices like cameras and smartphones.

TEST PERFORMANCE

Image quality: The total rating takes into account technical measurements taken in the lab (20%), as well as the expert viewing test (80%).

Sound quality: As with image quality, the overall rating includes technical measurements (20%) and the expert listening test (80%).

Ease of use: Includes ratings for setting up the television, daily and advanced use, the remote control and the user manual.

Smart TV (online content): Includes ratings for the layout, quality and navigation of TV apps and the speed and navigation of internet browsing.

Connections and tuners: Includes ratings for video inputs, audio outputs, USB sockets, PC connections, digital tuner and other features, such as built-in wi-fi, camera and microphone.

Energy efficiency: Power usage while turned on, in standby mode and turned off.

Using as a multimedia player: Ratings for video and photo playback via USB, including the image quality of still photos, and for network navigation.

Using as a recorder: Ratings for PVR features and the operation of the pausing live TV and recording functions.

3D performance: The overall rating includes the results of the 3D viewing test and the ease of use of the 3D function.

Useful contacts:

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