

Wrapped in good intentions



Why Europe's packaging rules might do more harm than good

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Summary

- The Packaging and Packaging Waste Regulation (PPWR) reflects a recurring regulatory temptation: the assumption that the EU already knows which direction innovation should take, and that rules should enforce it.
- Adam Smith's insight remains relevant: no central authority possesses sufficient knowledge to direct a complex economic system. The information needed to judge whether reuse or single-use packaging is better is dispersed across engineers, manufacturers, distributors and consumers and varies by context.
- By prescribing specific methods rather than setting outcome-based goals, the PPWR mistakes the means for the end. What matters environmentally is the destination, not the path mandated to get there.
- The waste hierarchy, applied rigidly, becomes a moral ranking rather than a practical guide and can push policy towards formally 'circular' solutions that carry a higher overall environmental cost.
- Every hour a small business spends on compliance is an hour not spent innovating. Administrative burdens do not fall equally: multinationals absorb them, and they weaken SMEs.
- The honest admission is that we cannot know in advance which packaging solution is best. Regulation that pretends otherwise does not just constrain markets – it constrains the very process of discovery through which better answers emerge.

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The Istituto Bruno Leoni (IBL) seeks to promote a more informed discussion of topics like the environment, competition, energy, liberalisation, tax policy, privatisation and welfare state reform. Established in 2003, IBL strives to act as a resource for politicians and policy makers by stimulating greater awareness among private citizens on all questions related to public policy and the role of the state. For more information about the IBL, visit www.brunoleoni.it.

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Introduction

There are coincidences that seem to have been penned by an author with a taste for irony. On 12 August, the new Packaging and Packaging Waste Regulation (PPWR) came into full force. It is a regulation that reflects a distinctly European confidence: the idea that, with a sufficient set of requirements, targets and definitions, even packaging can be persuaded to 'behave well'. Curiously, this is also the year we mark the 250th anniversary of Adam Smith's masterpiece, *The Wealth of Nations* (Smith, 1776). On the one hand, we have rules that go into the minutest detail of how packaging should be designed, reused and recycled. On the other, we are celebrating the author who explained why no central authority possesses all the knowledge necessary to organise a complex economic system. It is a curious coincidence, and perhaps an instructive one too. Let's be clear: the problem does exist. According to Commission data, in 2022 the European Union generated 83.4 million tons of packaging waste (Eurostat, 2024). That works out to 186.5 kg per person: meaning that, newborns included, every European generated as much packaging waste last year as the bodyweight of 2 adults. Curbing these figures is, therefore, a legitimate and sensible objective. The question is a different one: is PPWR really the best way to achieve this?

The temptation of 'Brussels knows best'

There is an idea that runs through much contemporary regulation. It is rarely stated openly, perhaps because saying it out loud would sound a little presumptuous. The idea is this: 'We already know which direction innovation should take.' More reuse. More recycled content. Elsewhere, the mantra has run much the same way: more renewables. More standardisation. More compliance. At first glance, it seems reasonable, until you come up against reality. Take a simple coffee cup, for example. In public debate, single-use items are often portrayed as the villain of the story, whilst reusable items play the hero. The problem is that the real world doesn't follow a script. A reusable cup can be an excellent environmental choice. Or it might not be. There's one answer that we engineers love (and which everyone else, on the other hand, hates): it depends. It depends on how many times it's actually used, how much energy it takes to wash it, how much water the system consumes, and how long it remains in use.

You only need to carry out a Life Cycle Assessment to realise that there is no universal winner, only a break-even point: the moment reuse starts to actually pay off environmentally. Before that point, single-use items may even be preferable according to certain indicators; after that, reusables tend to come out on top (Life Cycle Initiative, 2021). It all depends on the actual conditions of use. The same applies to crates, containers and reuse systems. And it is precisely here that Adam Smith remains surprisingly relevant today.

His most important insight was not that the market was a perfect mechanism. It was that no individual or institution possesses sufficient knowledge to direct a complex society from above. The relevant information, in fact, is distributed amongst many different players: the engineer who designs the cup, the manufacturer who knows the materials, the distributor who organises the logistics, and the consumer who washes it and, through their daily choices, determines whether or not that reuse system will reach its break-even point. No one has a complete overview of the entire system. Not even Brussels.

For this reason, Smith warned against the legislator's temptation to believe they could organise society according to a pre-established plan. In his *The Theory of Moral Sentiments* (Smith, 1759), he uses the image of the 'man of system' to describe those who 'seem to imagine that they can arrange the various members of a large society with the same ease as a hand arranges the pieces on a chessboard'. But reality, he adds, presents greater friction: 'on the great chessboard of human society, every single piece possesses its own principle of motion'. Seeking to determine in advance which organisational model should prevail is a slippery slope – not because we are indifferent to the

impact we have on the environment, but because innovation is a process of discovery. And one does not discover something one already presumes to know.

When the means are confused with the end

Every engineer learns to ask this question sooner or later. Are we trying to achieve a result, or impose a method? The difference seems subtle. In reality, it changes everything. Imagine walking into a supermarket and stopping in front of the fruit and veg section. Two cucumbers sit on the counter. One is sold loose, whilst the other is wrapped in a thin (but no less insidious) plastic film. At this point, our brain immediately jumps straight to the obvious answer. Or at least, to what looks like one. Packaging isn't necessarily the problem. Sometimes it solves a bigger problem. The same logic applies to most packaging innovations. Let's suppose a company develops packaging that uses 40% less material. Another company, its competitor, increases recycled content but produces heavier packaging. Which of the two is the better choice? The most honest answer is that, once again, we cannot know for certain beforehand. It depends on logistics, energy consumption, emissions, actual recycling rates, and even the amount of product damaged or wasted along the supply chain. If the aim is to reduce waste, emissions, and resource consumption, what should matter is the destination. Not necessarily the path chosen to get there.

Adam Smith would probably suggest a more modest approach: set the goal and let entrepreneurs, engineers and innovators compete to find the best route. In *The Wealth of Nations* (Smith, 1776: Book IV, Chapter II), he observes that the legislator who presumes to tell private individuals how to use their own resources assumes an authority that can be trusted 'to no single person, nor to any council or senate whatsoever'. Two hundred and fifty years on, his observation remains surprisingly relevant. Knowing which problem we want to solve does not necessarily mean we already know the best solution.

The PPWR, by contrast, incorporates a specific idea of how the problem should be solved. Underlying this is the so-called waste hierarchy, introduced by the EU Waste Framework Directive. The hierarchy was conceived as a general rule: a moral ranking of waste. At the top sit the virtuous: prevention and reuse. Just below these are recycling and other forms of recovery, including energy recovery. Further down the list is incineration without energy recovery and, bringing up the rear, landfill. As a rule of thumb, it is hard to disagree. It is better to avoid waste than to recycle it, and better to recycle it than to bury it. The problem is that practical rules, sooner or later, come up against the real world. And the real world is full of trade-offs. As Antonio Massarutto noted, this hierarchy often ends up being interpreted too rigidly, transforming from a guiding principle into a minor creed. Extracting materials can require more energy. Reusing a container can mean more transport operations. Recycling materials can require more water. The seemingly more 'circular' pathway is not always the one with the lowest overall impact.

In the case of PPWR specifically, it is by no means obvious that generating more recyclable waste is always preferable to generating less waste destined for energy recovery. Studies by the European Commission's Joint Research Centre (JRC) (Garcia-Gutierrez et al., 2025) show that environmental performance depends on the specific fraction being treated, making it impossible to establish a hierarchy that applies in all cases.

For some fractions, such as mixed plastics, energy recovery may even prove more efficient than particularly energy-intensive recycling processes. When the legislator decides not only on the target but also on the moral ranking of the available solutions, one risks no longer asking the most interesting questions. Is it better to maximise recycling or minimise the overall environmental impact? Is it better to have more formally 'circular' packaging or less waste overall? The two often go hand in hand. But not always. And it is precisely in that 'not always' that the problem lies. Because the economy, like engineering, thrives on compromises. Only ideologies have the privilege of doing without them.

The hidden cost of sustainability

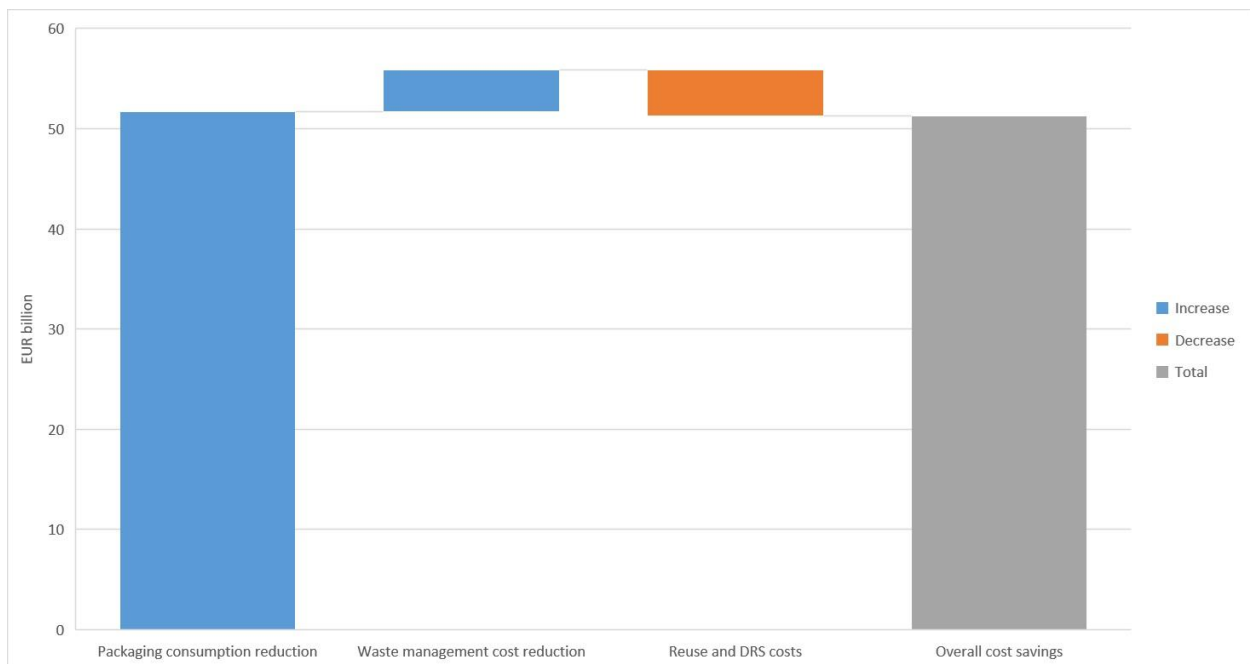
Finally, there is a third problem. It is the least visible and, for that very reason, the most overlooked. Let's imagine a small family-run business in Emilia-Romagna that produces packaging for the food sector. The owner divides his days between impatient customers, late suppliers and machinery which, like all the important things in life, carefully chooses the worst possible moment to break down. With the PPWR, he will also have to devote a significant part of his time to collecting data, verifying recycled content, completing declarations and documenting processes. If he also sells in several European countries, he will discover that the single market still retains a surprising degree of local diversity: national registers, different EPR schemes, different portals, different deadlines and different points of contact. Not enough to prevent trade, of course. Enough, however, to make the administrative history of a pallet seem heavier than the pallet itself. Perhaps none of this is pointless. But none of it comes free.

Adam Smith observes that 'the greatest improvement in the productive powers of labour' stems from the division of labour (Smith, 1776). In other words, we create value because people specialise. The engineer acts as an engineer, the sales representative acts as a sales representative, and the entrepreneur acts as an entrepreneur. It is, therefore, easy to see how every new administrative task erodes a part of that specialisation. Every hour spent filling in paperwork is an hour not spent designing better products, serving customers or experimenting with new solutions. Smith had already grasped the crux of the matter. Ronald Coase, almost two centuries later, would name it transaction costs. As Carlo Stagnaro points out in his book on the British Nobel laureate (Stagnaro, 2024), doing business is not just about producing something.

It also means gathering information, coordinating people, verifying agreements and building trust. These are all activities that nobody sees, but which someone has to carry out. As bureaucracy increases, so does the cost of cooperation. The problem is that these costs do not weigh equally on everyone. A multinational already has compliance departments, consultants and dedicated resources. A small business, very often, does not.

The European Commission's own impact assessment estimates approximately €1.3 billion per year in additional administrative costs, largely linked to certifying recyclability and recycled content. On top of this are €4.6 billion in additional costs for reuse schemes and deposit-return systems (DRS) (European Commission, 2022). None of this will eliminate a single extra piece of packaging; it will simply produce a considerable amount of paperwork proving that the packaging is the right sort. It is true: according to the Commission, PPWR would generate net savings of €51.3 billion. Looking at the figures, this 'miracle' would stem from €4.2 billion in reduced waste management costs and a reduction of €51.7 billion in units of packaging sold or consumed (see Figure 1) (European Commission, 2022).

Figure 1: European Commission estimates of the economic effects of the PPWR compared with the 2030 baseline scenario



Source: European Commission (2022)

However, these figures warrant caution. First, these are not benefits observed in the real world. We are talking about the difference between two worlds that exist only within a model. On the one hand, there is the 2030 baseline, a sort of 'business as usual' scenario in which existing policies continue to apply and packaging waste rises from 77.8 to 92.4 million tons by 2030. On the other hand, we have an alternative future in which PPWR comes into play. The benefit attributed to PPWR is the difference between these two imagined futures. There is nothing illegitimate about this exercise. But it is worth remembering that we are comparing one forecast with another forecast, not an observed fact with an observed fact.

Secondly, selling less packaging does not in itself equate to greater well-being. In fact, one would need to deduct the costs of reuse and deposit schemes, take into account logistics, washing, wastage and any effects on service quality, as well as assess the extent to which the result depends on the model's assumptions. For now, the balance remains positive on paper. But paper, as is well known, is also the material from which much packaging is made.

Here a second aspect emerges that Smith would have recognised immediately. In *The Wealth of Nations* (Smith, 1776: Book I, Chapter III), he noted that the extent of the market limits the division of labour. As operating costs rise, it becomes harder to enter the market, grow, and specialise. Thus, a potential paradox emerges. A regulation designed (in theory) to promote more sustainable solutions risks primarily benefiting those who are already large and well-established. And when it becomes harder to enter the market, it also becomes harder to challenge those already within it. The result may be less competition, less experimentation, and less innovation – a curious conclusion for a regulation introduced with the entirely laudable aim of improving the future.

A 250-year lesson in humility

The problem with the PPWR, as with so many other regulations, is not the objective. Reducing waste, resource consumption and environmental impacts is a perfectly laudable objective. The real issue lies elsewhere: how sure can we really be that we already know the best path to get there? Sustainability, like prosperity, rarely stems from those who think they already have the solution. It far more often stems from those who leave room for discovery.

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