

Red Tape Loss:

The opportunity costs to
consumers of

EU overregulation



By

Fabio Fernandes

and Emil Panzaru



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Innovation is key to progress in a world increasingly concerned about better ways to solve everyday problems, such as inflation, the cost of living, and the smart use of natural resources. A constant rate of technological discovery fuels consumers' optimism about humanity's future and enlarges the market, leading to continuous economic growth and prosperity for all.

Yet, while some regions and countries focus on investing in technological solutions and pushing scientific boundaries, others prioritize regulation.

The latter jurisdictions claim to provide the same level of cutting-edge solutions, with extra safety for everyone involved.

However, there is no such thing as regulation without trade-offs. That is to say, businesses and consumers lose out on less costly alternatives to deliver the same goods and services, waste precious resources that would have been better off spent elsewhere, and, in general, forgo the benefits of better products and services that could have been - what economists refer to as "opportunity costs". Unsurprisingly, innovators and companies in these areas spend more time adapting to rules than improving consumers' lives.

This divergence becomes apparent when we compare regions like the United States and some parts of Asia, which heavily invest in innovation, and the European Union, where regulatory frameworks often take center stage. Five case studies starkly contrast the two attitudes: space exploration versus tethered bottle caps, robotics versus standardization, supersonic flights versus flight bans, agricultural innovations versus strict farm regulations, and artificial intelligence versus more internet restrictions.

This policy paper aims to study innovation cases and analyze best practices to provide a regulatory framework to increase innovation and consumer choice.

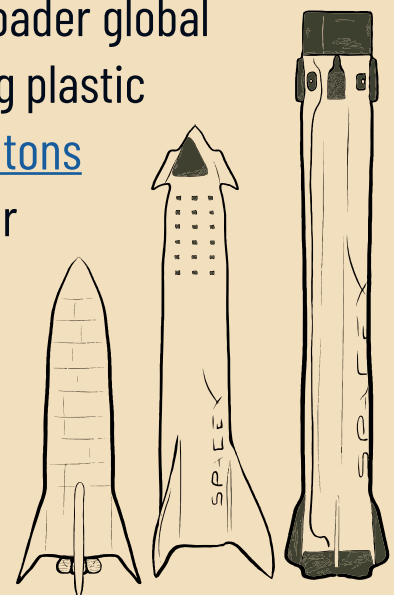


Case 1: Space Exploration vs. Tethered Bottle Caps

U.S. companies like SpaceX are leaders in global space innovation. Over the past decade, SpaceX has developed smaller, lighter, and more efficient rockets than anything previously seen in the space industry. For instance, their [Starship](#) project aims to revolutionize space travel with reusable rockets, cutting launch costs by up to 70%, and unlocking commercial space tourism and interplanetary travel potential. Since 2016, SpaceX has successfully reduced the number of necessary rocket parts, speeding up production time and cutting costs by millions. It is [estimated](#) that SpaceX invested 1.9 billion dollars (Inflation adjusted) in R&D to develop the Falcon 9 reusable rocket launchers.

Moreover, it has established its dominance in space exploration, as it is responsible for [80% of all payloads](#) delivered to orbit. Most recently, the company was able to return its rocket and land on a gyroscopic platform - the only company in the world able to achieve this feat and possess the know-how behind the technology.

Meanwhile, in the European Union, regulatory focus has shifted to reducing plastic waste reduction. A key example is the [EU directive](#) requiring permanently attached plastic bottle caps to prevent excessive littering. While the measure has good intentions, it distracts from the broader global race in technological innovation. Europe is indeed a big plastic waste producer, with more than [53 million metric tons in 2019](#), but so is every region with a large consumer population. In reality, Europe fares comparatively better than regions such as North America, Asia, and North and Sub-Saharan Africa, [according to the latest UN estimates](#). Also, Europe's recycling program accounts for less than 15 percent of



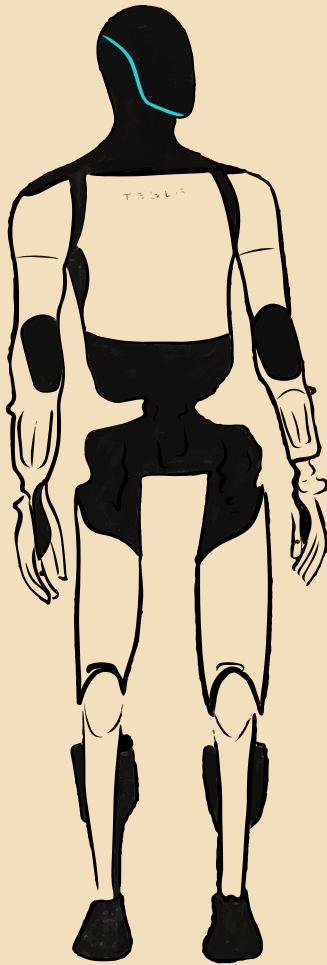
waste disposed across the continent, which shows that there are far more helpful ways to innovate in waste management than attempts to change consumer habits.

The shocking and concerning surprise is that the directive has achieved the exact opposite of its intentions. According to an [independent study](#) by PricewaterhouseCoopers (PwC), tethered caps could result in between 50,000 and 200,000 tons of additional plastic being used annually and a further 58-381 million kg CO2 equivalent of emissions. If the environmental consequences weren't enough, the study also calculated the cost of introducing tethered caps to be between 2.7 billion and 8.7 billion euros necessary to adapt bottling lines. Companies will need to pass on this massive investment to consumers, who have seen their preferred beverages increase in price. The policy further creates an enormous opportunity cost for companies that could have used that money to make their products better, more efficient, healthier, or even cheaper for the end consumer. EU bureaucracy has failed to fix the problem by ignoring the costs it creates. Instead, it has punished consumers by depriving them of innovation and improvements in areas they care about.

Companies' time and resources spent complying with this regulation could have been invested in more impactful advancements, especially in areas that could reduce environmental footprints, such as waste management, recycling, artificial intelligence, and production lines. Putting opportunity costs into perspective, adapting production lines to introduce tethered caps has cost EU companies at least 2.7 billion euros. By contrast, SpaceX's innovations only cost 1.9 billion dollars, and they are reaching for the stars while Europe is struggling with plastic caps.



Case 2: Robotics vs. Standardization



Across the Atlantic, robotics is becoming a focal point of cutting-edge technology. Companies like Boston Dynamics and Tesla are developing robots capable of performing complex human-like tasks, with potential applications ranging from healthcare to logistics. Boston Dynamics' robot Spot took roughly four years to go from concept to market, with millions of dollars invested in R&D. Even though the exact sum spent to develop their latest version of the smart robot Spot is unknown, in 2022 the company (which had recently been acquired by Hyundai Motor Co) pledged to invest [432 million dollars](#) in AI, robotics, and research centers. Analysts expect the global robotics market to reach 214 billion dollars by 2030, with America and Asia leading the innovation boom.

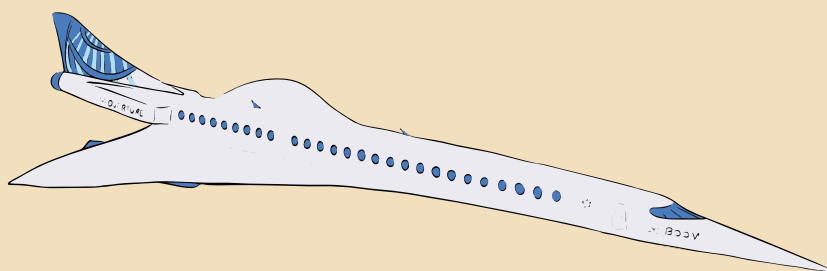
By contrast, during the same time, an overwhelming majority of the European Parliament passed a reform that made USB-C connectors the standard charger for most electronic devices across the European Union. [An Impact Assessment Study on Common Chargers](#) by Ipsos and Trinomics for the European



Commission in 2019 found that a new standard charger would generate a 655 million Euros decrease (equivalent to a whopping 723 million Euros in 2024) in revenue for the industry and especially a loss of competitive advantage for Apple's supply chain. While helpful for consumers in a small way, the EU's focus on unifying charging cables is ultimately wasteful. Certainly, it doesn't advance the frontier of human capability like robotics.

Case 3: Supersonic Flights vs. Flight Bans

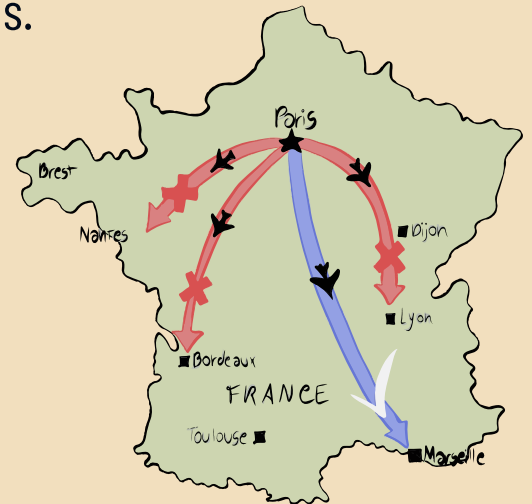
Supersonic flight is poised to make a comeback, with American companies like Boom Supersonic planning to launch commercial supersonic jets by 2029. Boom's Overture jet could halve the time it takes to travel between continents, slashing a New York to London flight from 7 hours to just 3.5 hours. Thankfully, the U.S. government plans to ease regulations to accommodate supersonic air travel, creating a market with an estimated worth of 260 billion dollars. The aerospace firm Boom Supersonic secured 270 million dollars to fund its development in 2020. Two years later, the same company received a contract worth up to [60 million](#) dollars from the US Air Force (USAF) to accelerate the R&D of its upcoming 'Overture' supersonic flight-capable aircraft. Part of the investment will go toward building a world-class supplier network and a one-of-a-kind [super factory](#) for aerospace manufacturing in the United States.



Meanwhile, France has gone the opposite route in Europe, banning short-haul domestic flights to reduce carbon emissions. The decision exemplifies the contrast between a focus on cutting-edge technological advancement and the stifling effect of onerous rules. The decision is more symbolic than practical in reducing carbon emissions since the ban affects only three routes – between

Paris-Orly Airport and Nantes, Bordeaux, and Lyon. According to official statistics, domestic flights only accounted for [4 percent](#) of the French transportation industry's CO2 emissions.

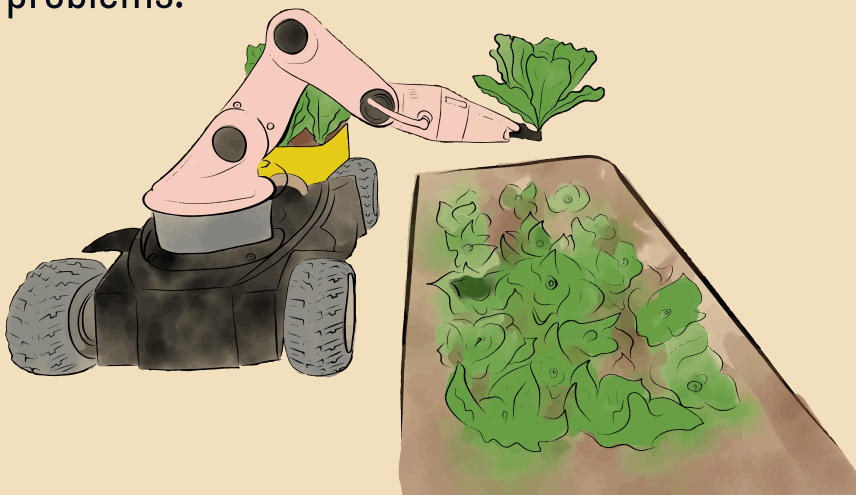
This mindset of green posturing means Europe finds itself grounded while the U.S. soars ahead with supersonic air travel.



Case 4: Agricultural Innovation vs. Farm Regulations

In the U.S., companies invest heavily in agricultural technology, using robotics, artificial intelligence, and cleaner chemicals to revolutionize farming. John Deere, for instance, has developed [AI-powered tractors](#) that can autonomously plant crops, increasing efficiency and reducing labor costs. The potential impact of such innovations is enormous, with initial figures suggesting that AI could add [127 billion dollars](#) to the global agricultural sector by 2025.

Conversely, the European Union has spent the last five years discussing and debating the [Farm2Fork strategy](#). The cornerstone of the European Green New Deal, the strategy focused on restricting pesticide use by 50% and setting ambitious sustainability goals, such as dedicating 25% of agricultural land to organic farming. Despite its lofty ambitions, it soon ran into two grave problems.



First, it became entangled in the EU's bureaucratic web: EU policymakers assigned DG Sante the portfolio even though it was not the proper group

for agricultural policy (DG Agri) and had few human resources to handle the operation. The decision subsequently led to a departmental fight for influence between Sante and Agri and poor political performance - of the 27 proposed pieces of legislation meant to constitute Farm2Fork, only nine had been adopted by January 2024, with the overall project now on indefinite hiatus. The immediate nonpecuniary opportunity costs of Farm2Fork were a far more complicated civil service structure that its own participants struggled to understand, time and energy spent on meetings that never went anywhere, and wasted opportunities to have settled other issues via DG Sante rather than being preoccupied with Farm2Fork.



Even if the EU had somehow agreed on Farm2Fork, it would have neglected its negative impact on European farmers and consumers. The Union neglected to do an impact assessment in 2019 when Commissioners and MEPs first discussed Farm2Fork. It was up to the United States Department of Agriculture to investigate the problem of opportunity costs. [The resulting report](#) found that Farm2Fork would increase consumer prices, reduce European exports, and decrease overall agricultural production by 7-12 percent. Farmers were bewildered by the advice to switch to organic production, which only accounts

for 10% of all consumer purchases in Europe, meaning producers were at risk of not finding any buyers for their fresh produce and reeling from the shortage of effective fertilizers and livestock feed. Unsurprisingly, farmers decided to take matters into their own hands and protested against Farm2Fork [all across Europe](#). The EU has shelved any talk of Farm2Fork for the time being.

The European Union ignored the actual costs of Farm2Fork in favor of a mission-based list of objectives that never came to be. By contrast, concrete U.S. agricultural innovations are already taking root, driving productivity and reducing environmental impact more effectively than regulation or well-sounding principles ever could.

Case 5: Artificial Intelligence vs. Internet Regulation

The U.S. is also spearheading innovation in the AI sector, with companies like OpenAI, Google, and Microsoft pouring billions into artificial intelligence. The AI industry is expected to grow to \$15.7 trillion by 2030, igniting a revolution in healthcare, finance, and manufacturing. One particular region is leading the chip production: the Taiwan Semiconductor Manufacturing Company (TSMC) [makes all](#) of the world's advanced AI chips, and one American company (NVIDIA) is responsible for designing [95% of the AI chips](#) in the market. In addition, the big five firms (Amazon, Alphabet, Meta, Apple, and Microsoft) collectively account [for almost twice as much R&D](#) as the entire EU public sector.

Meanwhile, in the European Union, regulatory bodies obsess over data protection laws, such as the General Data Protection Regulation (GDPR) and the Digital Single Market directive, which have made the internet more cumbersome to navigate thanks to constant cookie policy prompts and restrictions on data usage. One estimate claims Europeans waste [575 million hours per year](#) clicking on cookie banners alone. Businesses also face hidden costs from

these cookie banners, such as the legal cost of hiring lawyers and striking up privacy agreements, the cost of employees wasting time implementing and dealing with each pop-up, and the cost of monitoring services and creating databases featuring every single visitor to the company's website, to name just a few.



While protecting users' privacy is important, these regulations only add extra layers of bureaucracy that slow innovation, making it harder for European companies to compete in the global AI race.

Policy Recommendations for the EU:

1. Foster an Innovation-First Approach Policymakers in the European Union should prioritize innovation by creating regulatory environments that encourage technological advancements rather than hinder them. This includes:

- **Simplifying Regulatory Frameworks:** Streamlining approval processes for new AI, robotics, and agriculture technologies.
- **Encouraging Private Investment:** Providing tax incentives or subsidies for companies investing in research and development (R&D).
- **Establish Cross-Border Initiatives:** Foster international partnerships to exchange knowledge and technologies between key Western partners such as the United States.
- **Facilitate Talent Development:** Facilitate the entry of high-skilled professionals in key areas and promote education and training programs to build a skilled workforce ready to lead in innovative industries.

2. Implement Proportionate and Flexible Regulations - Regulations should be proportionate to the risks they aim to mitigate and adaptable to the rapid pace of technological advancements. Recommendations include:

- **Adopting Risk-Based Approaches:** Tailor regulations to the actual risks posed by technology rather than blanket rules like the precautionary principle, which stifle diverse innovations merely because discoveries could constitute a problem (rather than offering proof that they have drawbacks).
- **Periodic Reviews:** Regularly reassess regulations to ensure they remain

relevant and do not impede progress.

- **Pilot Programs:** Allow for experimental trials of new technologies under open market conditions to evaluate their impact before implementing broad regulations.
- **A regulatory sandbox for civil services:** EU references to regulatory sandboxes currently limit the framework to small-scale initiatives in a specific sector. Instead of such limited regulatory relief, the lessons of what works and what doesn't in terms of policy should shape the way bureaucracies operate in the future. Create a comprehensive system of regulatory learning and adaptation, which records and studies best cases like the ones described in the report, aiming for broader, non-sector-specific regulatory reform.

3. Balance Environmental Goals with Technological Innovation -

Environmental sustainability and innovation are not mutually exclusive. Policymakers should:

- **Promote Technological Solutions for Environmental Challenges:** Support innovations that help improve sustainability and recycling practices instead of product bans.
- **Evaluate Costs and Benefits:** Conduct comprehensive impact assessments of environmental policies to minimize unintended consequences, such as increased plastic use from tethered caps.
- **Leverage Global Best Practices:** Collaborate with global partners, such as the United States, to harmonize proven, innovative methods for addressing environmental concerns and mutually approve these technologies.

4. Enhance Global Competitiveness - To remain competitive in the global market, the EU must reduce regulatory burdens that deter innovation. Specific measures include:

- **Revisiting Data Protection Rules:** Simplify compliance with privacy laws like GDPR while ensuring robust consumer protections.
- **Supporting Emerging Industries:** Focus on high-growth and high-importance sectors for economic growth and national security, such as AI, chips, biotechnology, and aerospace.
- **Reducing Bureaucracy:** Cut red tape that diverts companies' resources from innovation.

CONCLUSION

While moderate regulation is necessary to ensure safety and fairness, excessive focus on rules can slow innovation. The stark contrast between the innovation-driven United States and the regulation-heavy European Union highlights the long-term consequences of spending more time regulating than innovating. As American companies lead the charge in AI, robotics, and space exploration, the European Union risks being left behind, increasingly isolated by regulations that stifle, rather than inspire, the next generation of breakthroughs.

Rules should never act as barriers to progress. Instead, they should be carefully designed to complement and kickstart innovation. Policymakers must embrace this mindset to ensure Europe remains competitive and its citizens enjoy the benefits of cutting-edge advancements. Ultimately, the choice is clear: some will shape the future, while others will regulate the present.



ABOUT THE AUTHORS

Fabio Fernandes



Fabio Fernandes is a communications strategist and financial markets expert with a strong background in consumer advocacy, public policy, and over 15 years of experience in communications and marketing. He has worked with leading companies in the finance, banking, telecommunications, and consumer goods sectors. Fabio holds both a Bachelor's and a Master's degree, which he leverages to analyze and address complex economic and regulatory issues. Currently, he serves as the Head of Communications at the Consumer Choice Center, where he plays a pivotal role in promoting policies that advance consumer freedom and innovation.

Fabio has authored numerous articles on a wide range of topics, including inflation, rising interest rates, the impact of "buy now, pay later" programs, consumer credit scores, insurance policies, the sharing economy, and regulatory challenges in intellectual property and innovation. Recently, his work has focused on the economic impact of policies affecting fast-growing technologies such as robotics, space exploration, and artificial intelligence.

Through his research, he advocates for a more balanced regulatory approach to foster innovation and entrepreneurship.

Emil Panzaru



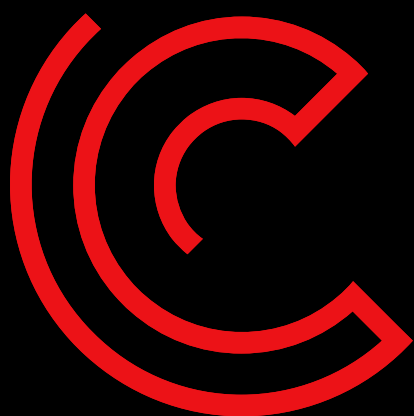
Emil Panzaru is the Research Director at the Consumer Choice Center. He successfully defended his PhD in Political Economy (Research) at King's College London in 2022. Before working at the Center, Emil was a Teaching Assistant at King's College London, where he taught students contemporary issues at the intersection of philosophy, politics, and economics.

He was also a Frederic Bastiat/Research Fellow at George Mason University's Mercatus Center.

In the past, he has published and helped publish academic research on incentives, knowledge problems, and public policy.



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CENTER

info@consumerchoicecenter.org
www.consumerchoicecenter.org

712 H St NE PMB 94982
Washington, DC 20002