ALUMNI
Paolo Merloni, President of the A. Merloni Foundation

SPACE ECONOMY
The next economy is right above us

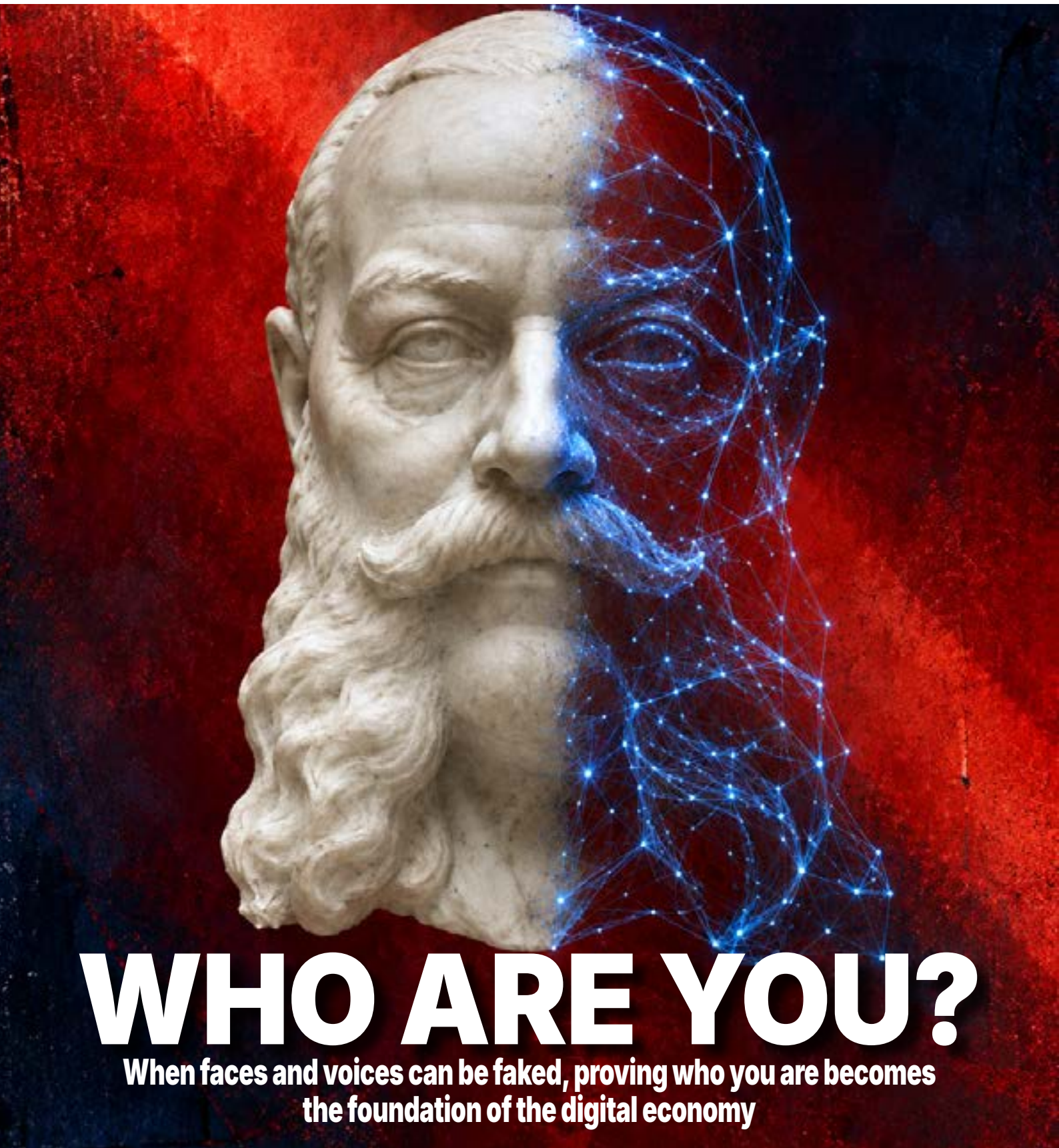
CAPITAL
Who will finance the next decade?

HEALTHCARE
How much are we willing to pay to live longer?

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BOCCONI UNIVERSITY, KNOWLEDGE THAT MATTERS

ISSUE 4 - 2026



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Knowledge Grows When It Is Shared



Research stems from the ability to ask new questions and the freedom to seek answers that may challenge what we think we know. For a university, investing in the production of knowledge means creating the conditions for this to happen: attracting talent, fostering interdisciplinary dialogue, and providing space for experimentation. It is a commitment that takes time and finds its purpose in contributing to our understanding of the world and to society's decisions.

At Bocconi, the 2026 Research Celebration highlighted this collective effort. The lifetime achievement award in research presented to **Guido Tabellini**, along with recognition for publications and achievements in competitive grant funding, reflect an open and ambitious scientific community. Behind every achievement lie tested insights, collaborations, and new generations of scholars. Celebrating research means recognizing the value of this journey and exploring its next frontiers.

One such frontier is artificial intelligence. Through the AISS laboratory, dedicated to AI in the social sciences, Bocconi is strengthening the convergence of diverse expertise to explore new research questions. The social sciences are undergoing a revolutionary moment. The ability to analyze texts, images, and data on scales that were previously difficult to achieve expands the scope of what we can study. The formulation of new hypotheses is also facilitated, without disciplinary boundaries. Researchers' judgment will remain essential for selecting questions, verifying results, and recognizing the limitations of the tools.

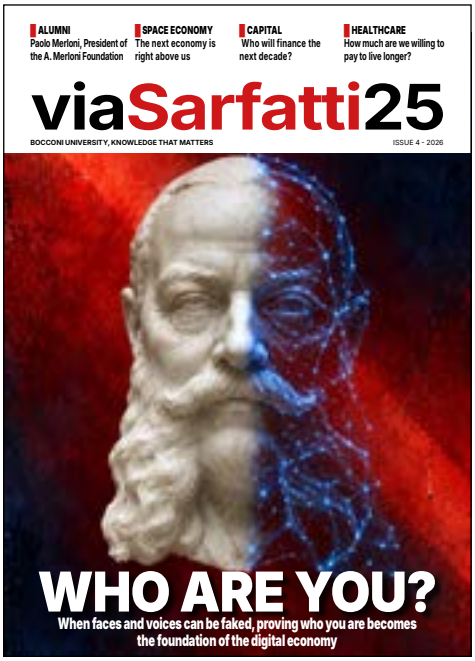
The social sciences also have another responsibility: to study how AI is transforming society, the economy, and politics. Who benefits from these new opportunities? How are work, inequality, and opinion-forming changing? Addressing these questions requires rigor and independent thinking, even with regard to the models we use.

The university's responsibility also includes sharing knowledge. For research to contribute to public decision-making and people's lives, accessible language and opportunities for dialogue are needed. This magazine, too, was created to connect those who produce knowledge with those who can use it.

It's a commitment that starts with the youngest among us. *Once Upon a Time There Was Research: Fairy Tales Inspired by Ideas That Change the World* brings together ten stories born from the studies of our researchers. The project builds on the *Ricerca, Trova* initiative, which brings Bocconi into Milan's neighborhoods and libraries. Through an audiobook, games, and texts and images developed with AI support, the adventures of Lina and Teo invite children and families to observe, ask questions, and change their minds. Introducing people to research also means fostering their curiosity: the ability to look at the world and ask "why."

Francesco Billari, Rector

[SOMMARIO]



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A Company's Growth Is Measured by Its Ability to Build the Future

For Paolo Merloni, President of the Aristide Merloni Foundation and Executive Chairman of the Ariston Group, long-term vision, meritocracy and attention to people are the keys to reconciling the family's regional roots with a global scale. This entrepreneurial philosophy lives on through a new Bocconi Chair in Entrepreneurship named after his father, Francesco

by Andrea Celauro, Barbara Orlando

Growth means more than just getting bigger. It involves integrating skills, investing in people and maintaining a clear direction — even when market pressures demand immediate results. This is the vision that guides **Paolo Merloni**, Bocconi Alumnus, President of the Merloni Foundation and Executive Chairman of the Ariston Group. The Group is currently undergoing a phase of international expansion, most notably marked by the acquisition of Riello. It is an industrial model that balances professional management with family identity, and innovation with deep local roots, as reaffirmed by a €500 million investment plan recently announced for Italy. It also reflects a view of business as a responsibility toward future generations, where tenacity and kindness can coexist, and merit must always take precedence over personal connections. This vision is embodied in the Francesco Merloni Chair in Entrepreneurship, established at Bocconi University to study the conditions that allow new firms not only to emerge but, more importantly, to grow.

The Ariston Group has completed the acquisition of Riello, an Italian maker of heaters and conditioners, following a string of operations that have progressively expanded the Group. When does an acquisition represent genuine growth, and when does it merely add size and complexity?

An acquisition represents genuine growth when it does more than just increase the company's scale; when it strengthens capabilities, expands opportunities and contributes to building a more robust industrial project for the long term.

In the case of Riello, we identified a strong complementarity in terms of skills, technologies, brands, product portfolios and market access. The operation strengthens our presence in climate comfort, combustion technologies, and the commercial and industrial segments.

However, the value of an acquisition is measured primarily by the ability to integrate different entities, while preserving and enhancing their people, brands and strengths. Complexity becomes a risk when there is no clear industrial rationale, or when one fails to transform complementarities into opportunities for development.

THE VALUE OF AN ACQUISITION IS MEASURED PRIMARILY BY THE ABILITY TO INTEGRATE DIFFERENT ENTITIES WHILE PRESERVING AND ENHANCING THEIR PEOPLE, BRANDS AND CORE STRENGTHS

You have identified a long-term vision, a focus on people and high-quality governance as the decisive elements in transforming a family business into a multinational

corporation. Which of these three is the most difficult to uphold when market pressures intensify?
These three elements are closely interconnected, but perhaps the most difficult challenge is to maintain consistency with one's long-term vision. When pressures mount, there is a risk of focusing solely on immediate needs, thereby losing sight of future competitiveness.
A long-term perspective is one of the core strengths of a family-controlled company, but it must be supported by high-quality governance and competent individuals entrusted with genuine responsibilities.
I have always believed that a family company can only truly thrive and reach an international scale when it becomes a corporation also driven by professional managers. Entrepreneurs give the long-term vision, but growth is always a collective achievement. That is why it is essential to attract and nurture talent, encourage open dialogue and embrace diverse points of view.



The relationship between a firm and the area where it is based is often discussed in terms of the company's responsibility toward the community. But isn't there also a responsibility on the part of the local region toward the companies that have decided to remain there?
To begin with, the Ariston Group has announced a €500 million investment plan in Italy, which includes a new electronic components plant in Arcevia and a plant in Albacina designed from the outset to natively and pervasively integrate artificial intelligence into its industrial processes. This is a tangible sign of our commitment to our home region, the Marche, where Ariston Group was founded and from where it began its path towards growth and globalization.
At the same time, however, I believe the region itself (including institutions, the educational system, local communities and so on) has a significant responsibility toward companies there: to work together to create conditions that ensure that investment remains both feasible and competitive. A historical tie to a region remains important, but it is not enough.

You gave the documentary telling your father's life story a title that is somewhat unusual for an industrialist: Tenacity and Kindness. Can these qualities truly be reconciled when difficult decisions must be made?
I believe that not only are they compatible and reconcilable, but they are complementary. Tenacity is the ability to maintain a clear direction, confront difficulties and continue believing in a project even when results are not immediately forthcoming. Kindness, on the other hand, concerns the way one travels along that path, the respect management shows when interacting with others and the mindfulness regarding the consequences of one's decisions.
In my father, integrity, optimism, a genuine concern for people and tenacity coexisted quite naturally. Those who lead a business must often take difficult decisions. Taking such decisions with kindness does not mean being any less rigorous or avoiding responsibility; rather, it means exercising authority without confusing it with harshness, while remembering that behind every decision lie real people, their families and their communities.

The Aristide Merloni Foundation originated out of an industrial family deeply rooted in the local territory. What is the meaning of giving back today: is it merely returning a portion of the value generated, or is it helping to create the conditions for others to generate additional value?
Above all, it means helping create the conditions that allow others to build something new. While returning a portion of the value created is important, the most enduring contribution lies in investing in knowledge, education, skills and opportunities.
The Aristide Merloni Foundation was established over 50 years

PAOLO MERLONI
President of the Fondazione Aristide Merloni and Executive Chairman of Ariston Group, Bocconi Alumnus

A FAMILY COMPANY CAN ONLY TRULY THRIVE AND REACH AN INTERNATIONAL SCALE WHEN IT BECOMES A CORPORATION ALSO DRIVEN BY PROFESSIONAL MANAGERS

ago to foster the economic and social development of the region. Initially, it supported the creation of businesses capable of generating employment; over time, its focus shifted toward research, education, and support for students.
The culture of giving back is not just about donating financial resources; it also involves sharing experiences, expertise and networks, while guiding new generations of entrepreneurs.

You graduated from Bocconi University in 1992 and have mentioned that the institution strengthened your commitment to meritocracy. Upon joining your family business, did you ever perceive a tension between the value of merit and the value of belonging?
Belonging to an entrepreneurial family offers extraordinary opportunities, but it also entails a unique responsibility. Membership alone is not enough to qualify someone for a company role, nor can it serve as a substitute for skills, experience and leadership. Family continuity can provide a company with a long-term perspective and a sense of responsibility toward future generations. For these elements to become a true strength, they must be paired with robust governance, clearly defined responsibilities and a culture that is genuinely meritocratic. Family identity should represent an additional responsibility, not a privilege exempt from the test of merit.

To honor the memory of Francesco Merloni, you have chosen to fund a permanent academic chair dedicated to entrepreneurship. What question would you like this new chair to pose to the business world, say a question that is not being asked often enough today?
There is a great deal of discussion about the birth of new business ventures, but far less about the conditions that actually enable them to grow. A good idea is not enough; you need people, skills, capital, institutions, customers and markets capable of supporting experimentation and fostering growth.
The Francesco Merloni Chair in Entrepreneurship at Bocconi will study the launch and expansion of new entrepreneurial ventures, with a particular focus on the relationship between entrepreneurs and their ecosystems.
My father viewed entrepreneurship not as an individual achievement, but as the assumption of responsibility toward people, communities and the future.
Supporting a permanent chair means placing his experience and values at the service of enterprising new generations, bridging the past and the future.

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The Computer of the Future Will Be in the Sky

Bringing data processing directly into orbit opens up new possibilities for AI and satellite services. For Europe, the challenge lies in investing in and defining the rules for an infrastructure destined to influence global economics and geopolitics

by Simonetta Di Pippo

After decades of developing and utilizing on Earth a vast amount of space-derived data (from observation, navigation, precision geolocation and telecommunications satellites), the current trend is moving toward the creation of a massive, distributed computer at an altitude of 300 to 1,200 kilometers. In all likelihood, the next economic infrastructure will be an unprecedented computing system, one that will be located above our heads.

The space economy is not just another sector; it is an enabling, transversal layer. With the advent of artificial intelligence and large language models, this layer is taking on a new dimension: it is no longer just about connectivity, but about orbital edge computing, orbital data centers and AI in space.

FROM OBSERVATION TO PROCESSING

The traditional paradigm is linear: orbiting satellites observe, measure and collect data; this information is then transmitted to Earth and

processed in terrestrial data centers. While it is effective, the model is burdened by structural limitations, such as latency, congestion of downlink connections, high energy costs and the difficulty of responding in real time to events like wildfires, floods, naval movements or security threats.
The new frontier involves reversing this logic: bringing computing power to the very place where data is generated, that is, in orbit. Satellites equipped with GPUs and AI accelerators can perform inference directly on board, transforming raw imagery into actionable intelligence, such as identifying a ship in a specific area, detecting a collapsed building or spotting crops that are under water stress. Instead of transmitting the entire data stream back to Earth, only the final results are sent.
By 2026, this concept is no longer the stuff of science fiction. Axiom Space and Kepler Communications have announced the first operational nodes for orbital data centers in low Earth orbit. Meanwhile, Loft Orbital and Abu Dhabi-based Marlan Space have signed a billion-dollar contract for 50 satellites powered by Mistral's AI models. Furthermore, SpaceX has submitted proposals for orbital computing constellations that could potentially comprise hundreds of thousands of satellites. According to some estimates, the market for space-based data centers could grow from $1–2 billion in 2025–2026 to tens of billions by 2035.
The goal is not to replace terrestrial data centers, which will remain more efficient for the vast majority of workloads, but rather to create a complementary layer for orbit-advantaged applications. These



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include processing satellite data, deploying AI for defense and security, providing low-latency services in remote regions, and conducting high-energy intensity experiments powered directly by solar energy.

THE RULES FOR AN ORBIT THAT COMPUTES

If orbit is to become a data center, the regulatory framework must evolve. The EU Space Act, proposed in 2025 and currently under discussion, primarily addresses issues of safety, space debris, sustainability and cybersecurity. However, orbital computing introduces additional questions: Who controls the results of AI processing conducted in orbit when the data originates from different countries? Who is held accountable for an algorithmic error if a model misclassifies a target or triggers an alarm? How can an orbital data center, a potentially high-value strategic target, be protected?
And how can the expansion of satellite constellations be reconciled with sustainability in the space environment?
The service-based approach of the EU Space Act — which ties regulations to the service provided in the Union, rather than solely to the operator's location — could offer a significant tool. However, it is essential to recognize the transformation currently underway: we are no longer regulating merely satellites, but critical computing infrastructures that operate beyond national borders.

THE GEOPOLITICS OF ORBITAL COMPUTING

This competition is not purely technological. The United States, China and Europe are vying for control over the next layer of the global digital infrastructure. Whoever defines the standards, designs the architectures and owns these orbital computing constellations will secure a strategic advantage comparable to that attained by the major terrestrial tech platforms.
For Europe, the risk is arriving too late, while continuing to view space merely as an extension of traditional industrial policy. What is needed are investments in orbital computing that are an integral part of EU strategies for AI and strategic autonomy, along with public-private partnerships capable of linking strategic initiatives with startups and research hubs, as well as hybrid professional profiles, ranging from space engineers with expertise in artificial intelligence to legal experts capable of understanding algorithms.
If in-orbit computing is set to revolutionize the space economy and beyond, the task for European institutions, businesses and universities is clear: rather than merely reacting to this transformation, they must act to shape it. Because those who are able to master this burgeoning sector will also help define the planet's economic and geopolitical future.

THE TRADITIONAL PARADIGM IS LINEAR: ORBITING SATELLITES MAKE OBSERVATIONS, TERRESTRIAL DATA CENTERS PROCESS DATA. THE NEW FRONTIER LIES IN BRINGING COMPUTING POWER TO THE VERY PLACE WHERE DATA IS GENERATED

Europe Builds Its Own Network

With IRIS², the EU aims to secure satellite communications and reduce reliance on non-European operators. This constellation will strengthen the industrial supply chain and provide connectivity even in areas where terrestrial infrastructure is unavailable or disrupted

by Nicola Carraro, Oscar Adrian Robalino Florett

When we think of the infrastructure that underpins the economy, we tend to envision networks and systems built on Earth. Yet a portion of the communications upon which businesses and services depend travels through space. Satellite connectivity is an essential component of the space economy, with applications across numerous industries. In times of growing geopolitical tensions, having a secure and reliable system of communications is a strategic asset for Europe. Through IRIS², the European Union seeks to bolster its autonomy by reducing dependence on non-European infrastructure and operators.



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A CONSTELLATION TO CONNECT EUROPEAN

Established in 2023, the program involves a constellation of satellites distributed across various orbits to ensure broad geographical coverage. The infrastructure will provide secure and resilient connections, including in remote areas. Services are to be geared toward EU institutions and Member States, with capacity dedicated to government communications while also catering to the commercial market. The project's implementation has been entrusted to the SpaceRISE consortium, comprising SES, Eutelsat, and Hispasat. The first launches into orbit are scheduled for 2029. The operational significance of IRIS² has become evident in situations where land networks are unavailable or experience interruptions. In the event of natural disasters, for instance, satellite links can enable authorities to maintain communications and coordinate response efforts, even when local infrastructure has been damaged. The constellation will also be used for secure communications between EU governments and institutions, including the transmission of sensitive information.

THROUGH PUBLIC-PRIVATE PARTNERSHIPS, INVESTMENTS IN THE CONSTELLATION CAN STRENGTHEN THE INDUSTRIAL SUPPLY CHAIN

OPPORTUNITIES FOR THE SPACE INDUSTRY

The development of IRIS² opens up new prospects for the European space industry. Through public-private partnerships, investments in the constellation can strengthen

the industrial supply chain and foster the development of technologies that also have commercial applications. Italy is involved through some of its leading companies in the sector. In September 2026, Thales Alenia Space —a joint venture between Thales and Leonardo — announced a letter of agreement with Eutelsat to supply government communication systems for 330 IRIS² satellites, while Telespazio is among the key subcontractors for SpaceRISE. The involvement of these players could also create additional opportunities for Italian SMEs specializing in satellite components and technologies.

NEW SERVICES FROM SPACE FOR BUSINESSES AND CITIZENS

The economic opportunities extend beyond the companies directly involved in building the constellation. Once operational, IRIS² will be able to provide connectivity to businesses across a range of sectors. In maritime transport, for example, satellite links can ensure communication at sea, far beyond the reach of terrestrial networks. In the energy sector, they can support the monitoring of facilities located in remote areas. For business organizations, these connections can improve operational continuity and facilitate the use of digital services. These benefits may also extend to citizens, particularly in areas where terrestrial network coverage is inadequate.

THE FRONTIER OF QUANTUM COMMUNICATIONS

The development of IRIS² also looks toward new technological frontiers, through its planned integration with EuroQCI, the European initiative dedicated to secure quantum communications. The value of this investment will be measured, above all, by the ability to translate space innovation into accessible services and tangible economic opportunities for the EU.

Value Is Built on the Ground

From agriculture to logistics, the benefits of satellites depend on the ability to turn their data into services. For Italian companies to grow, they need the right expertise, public contracts and financing suited to long development cycles and uncertain revenues

by Leonella Gori

When a farmer decides where to irrigate, a ship finds its route or a city prepares for a flood, part of the answer may come from orbit. Satellites have become a quiet layer beneath daily life: they provide positioning, communications and a view of a changing planet. To understand the space economy, we need to look beyond rockets and ask what this layer makes possible on Earth.

THE SPACE INDUSTRY, FROM SATELLITES TO SERVICES ON EARTH

The value chain of the space economy is composed of two connected sides. "Upstream" companies design and build satellites, launch vehicles and the equipment that gets them into orbit. "Downstream" businesses turn signals and images into services people can use. Between them sit control centers



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and ground systems that keep space hardware working. The economic prize depends on all three: a satellite is useful only when its data can be reliably delivered, understood and put to work.
Consider agriculture. Images from space can help identify stressed crops and guide irrigation before water is wasted. Earth observation can also help track fires, assess storm damage and monitor coastlines.
Navigation supports logistics; satellite links connect places beyond the reach of conventional networks.
These are infrastructure functions, as essential to many decisions as roads, cables and power grids are to physical trade.

RELIABILITY AND RESILIENCE: THE NEW ECONOMIC CHALLENGES

As reliance grows, reliability becomes an economic issue too. Satellites, ground links and data services must be maintained and protected; interruptions can ripple through sectors far from the launch pad. Resilience belongs to the business case, not just the engineering plan.
Yet an orbiting network does not become valuable by itself. It needs engineers, software, secure ground stations and organizations that know how to turn raw information into timely decisions. It also needs customers willing to buy useful services. This is why the space economy affects so many sectors: its returns often take the form of a more productive farm, a faster response to a disaster or a supply chain that can see where goods are.

ITALY'S ROLE: BALANCING INDUSTRIAL EXCELLENCE AND BUSINESS GROWTH

Italy has strong aerospace expertise, specialized small firms and established industrial districts. But technical excellence alone may leave suppliers stuck at the edge of larger programs.
Long development cycles and costly equipment demand patient finance; fragmented firms need routes to scale, international partnerships and access to contracts. Public investment can create demand and share early risk, while private capital helps turn promising capabilities into durable businesses.

FROM PUBLIC FUNDING TO PRIVATE CAPITAL

The financing problem begins before a product earns revenue. Research, prototypes and testing consume cash for years, while customers may pay only at contractual milestones.
A bank loan can bridge a delayed public payment, but regular repayments fit poorly with uncertain cash flow. Equity investors can bear more early risk if they can expect dividends; founders must weigh growth against giving up a share of ownership.
The answer is a mix of funding matched to each stage: grants and public contracts to prove a technology, patient venture capital to bring it to market and debt once revenues are steadier.
Public buyers matter twice: contracts fund projects, while also signaling demand to investors. For Italy, the test is whether that signal can draw enough private capital to help small suppliers win customers beyond a single program.

THE INFRASTRUCTURE OF THE FUTURE WILL ALSO BE BUILT ON EARTH

The future infrastructure above us is therefore also an investment in capacity below: talent, manufacturing, data analysis and institutions that can connect them. Whoever can build and utilize the entire value chain will help shape how societies manage resources, respond to threats and compete. Looking up is a practical way to see the economy taking shape around us.

TO UNDERSTAND THE SPACE ECONOMY, WE MUST LOOK BEYOND ROCKETS AND ASK OURSELVES WHAT THIS INFRASTRUCTURE MAKES POSSIBLE ON EARTH

The Best Technology Is Not Enough

Luca Vincenzo Maria Salamone, Director General of the Italian Space Agency and a Bocconi alumnus, explains how Italy can turn its areas of excellence into services and markets. This is a challenge that requires research, the growth of SMEs and collaboration between the public and private sectors

by Pietro Masotti

Dialogue between the public and private sectors, the integration of space economy players into Italy's industrial system and a balance between research and the market. These are just some of the strategic issues that **Luca Vincenzo Maria Salamone**, Director General of the Italian Space Agency, deals with every day. Born in Catania and a graduate with degrees in Economics, Law and Political Science, he previously served as a senior officer in the Italian Navy and held positions in public administrations and government ministries, including Coordinator of the Mission Unit for Maritime Policies at the Presidency of the Council of Ministers. At SDA Bocconi, he completed the Executive Master in Management of Public Administrations (EMMAP) before being appointed Director General of the Italian Space Agency in 2023.

What role is Italy carving out for itself in the European space industry?
We can say without hesitation that Italy is a center of excellence. We have collaborations, agreements and ongoing activities with all the space agencies, first and foremost the European Space Agency, of course. But we are also a key partner of NASA, and we were among the first signatories of the Artemis Accords, the principles governing civil space exploration and the peaceful use of the Moon and lunar orbit, as well as Mars and asteroids. From an industrial perspective, we can rely on a broad and highly qualified supply chain comprising more than 400 companies, with revenues of over €4 billion and, according to the latest ISTAT data, 13,500 employees. One particularly significant figure is that 89% of these companies also operate in other sectors, ranging from aviation and mechanical engineering to automotive, ICT and electronics. This shows just how deeply space is already integrated into Italy's industrial system.

Which areas of excellence is Italy recognized for internationally?
Earth observation is certainly the first area in which we play a significant role, because we have a highly specialized supply chain. But our leadership is not only technological and industrial. Italy, for example, was one of the first countries, if not the very first, to develop a satellite constellation, COSMO-SkyMed. It was designed as a dual-use system, meaning that its satellites were conceived from the outset for both civilian and military purposes. The constellation was developed and funded by the Italian Space Agency and the Ministry of Defense and represents a highly significant asset, resulting from a particularly effective ability to collaborate across public administration, government and industry.

Although the space sector is still a relatively new and frontier economy, we already hear people talking about a "new space economy." What does this mean and what changes is the term intended to highlight?
The term "new space economy" reflects the fact that this market is no longer the preserve of large companies alone. SMEs and

ITALY? WE CAN SAY WITHOUT HESITATION THAT IT IS A CENTER OF EXCELLENCE. WE HAVE COLLABORATIONS, AGREEMENTS AND ACTIVITIES WITH ALL THE SPACE AGENCIES, FIRST AND FOREMOST THE EUROPEAN SPACE AGENCY

scaleups with specific scientific and technological expertise are increasingly entering the sector. This is a significant change because it suggests that the economy grows when the entire supply chain grows. Today, success does not depend only on developing the best technology, but on being able to turn that technology into infrastructure, services and markets that improve the competitiveness of the system as a whole. This may mean, for example, designing scalable, resilient systems that are integrated with the digital economy, increasing production volumes and reducing both time and costs. In recent years, Italy has been able to develop major space assets thanks to public funding, including funding linked to the National Recovery and Resilience Plan. The key step now is to ensure that these capabilities can generate benefits in other sectors too, whether in existing markets that can be expanded or in entirely new ones that have yet to be explored. This is how Italy's role in the European space sector can translate into greater competitiveness and greater strategic autonomy for the country as a whole.

Which sectors are most likely to trigger this virtuous cycle first?
Returning to Earth observation, the focus is shifting from simply gaining access to data to being able to transform that data rapidly into information, forecasts and services. Cloud computing, edge computing and artificial intelligence make it possible

OUR COUNTRY WAS ONE OF THE FIRST, IF NOT THE VERY FIRST, TO DEVELOP A SATELLITE CONSTELLATION, COSMO-SKYMED

to combine satellite data with information from terrestrial sensors and other platforms, creating new applications across every sector. Economic value is therefore increasingly shifting toward the ability to develop data-driven services and integrate them into users' decision-making processes. Another major area of development is connectivity. Low Earth orbit constellations are reshaping the telecommunications market and accelerating the integration of satellite and terrestrial networks, moving toward 5G and 6G and direct-to-device services. Navigation, positioning and timing services are another strategic infrastructure. Transport, logistics, telecommunications, energy and finance all depend on their accuracy and security.



Space is a market for companies, but also an important field for research. How does a national agency maintain a balance between these two priorities?
In the space sector, the relationship between knowledge, technology and economic application is particularly close. Without research, the technological frontier cannot advance. At the same time, without the ability to transfer knowledge into applications and products, a country risks failing to turn investment fully into industrial value. The Italian Space Agency's core activity remains the development of space assets, so our work is more strongly focused on procurement. But one of our responsibilities is also to create the conditions for business and science to come together, supporting knowledge along the path from research to technology, from demonstration to application, without assuming that every research result must necessarily lead to a commercial outcome. On the one hand, this means protecting frontier research, because it is from this research that the technological capabilities determining the country's future competitiveness may emerge. On the other hand, when a technology demonstrates tangible potential for application, the Agency can help reduce the technological and industrial risks involved in the transition through demonstration, validation and testing, thereby creating more favorable conditions for private investment.

***LUCA VINCENZO MARIA SALAMONE**, Director General of the Italian Space Agency, graduated from SDA Bocconi's Executive Master in Management of Public Administrations (EMMAP).*

Bocconi

Quando ti mandavo "i pacchi da giù"
per tirarti un po' su



E ora le soddisfazioni
più grandi sei tu
a regalarmele

We made it

Ci sono modi di sostenere uno studente che solo una nonna può conoscere.
Il nostro è dare a ogni talento l'occasione di esprimersi, offrendo un supporto economico a un terzo dei nostri iscritti.



Europe Can Lead, Without Domination

A pact with Canada, the UK, Japan and other partners would pool resources and reduce strategic dependencies. CORE, the pact proposed by IEP@BU, aims to give the EU a central role in technological, climate and demographic transformations

by Paloma Lopez-Garcia

Europe is going through four structural changes at once: the AI revolution, the green transition, demographic aging and a geopolitical upheaval.
The first three have been under way for years. The fourth is different, because it changes the framework in which Europe was acting on the other three. For decades the EU designed its climate, technology and social policies on the assumption of a stable, rules-based order sustained by American hegemony. That assumption no longer holds. This forces Europe to rethink where it stands in the world, and what that means for how it manages AI, the green transition and an aging population.

A CENTRAL POWER

The way forward I propose is that Europe becomes a central power: not a hegemon, nor one middle power among many, but the one that organizes like-minded countries that cannot coordinate alone. Canada, the UK, Norway, Switzerland, Japan, South Korea and Australia are each too small to shape the emerging order. With the EU, their combined GDP exceeds that of the United States. Going alone as a great power is not an alternative: Europe lacks the hard power and the political unity, and the EU produces only around 15% of global output.
The vehicle, developed by IEP Senior Fellows Daniel Gros and Nathalie Tocci, is a Compact for Open and Resilient Economies (CORE). It needs no new treaty. Partners would consult one another before taking decisions with cross-border impact, support each other against coercion and pool their strengths rather than replicate them. A looser tier of partnerships with the wider Global South would complete the picture.

What would a central power do differently on AI, climate and demography? It starts with a change of mindset. First, we can no longer assume that rules will protect us: AI, energy and migration are now arenas of dependence and leverage, and for each we must ask what Europe can do alone and what only with partners. Second, building coalitions requires self-restraint. If CORE is to work, Europe must resist the urge to impose its own regulations and terms on like-minded countries.



PALOMA LOPEZ-GARCIA
Director of the Institute for European Policymaking @ Bocconi University

IEP@BU The mission of the Institute for European Policymaking @ Bocconi University is to conduct, debate and disseminate high-quality research on the major policy issues facing Europe, and the EU in particular, its Member States and its citizens, in a rapidly changing world.

AI: WHERE DEPENDENCE BITES

Europe is well behind the United States and China in developing and owning AI, and geopolitics has changed what that means. The gap is no longer only a competitiveness problem but a potential instrument of coercion. Washington has restricted access to advanced models, and Beijing to critical materials. The gap reflects Europe's specialization in mid-technology sectors. In 2022 the US software sector alone spent €104 billion on capital expenditure, mostly on computing infrastructure, against €1 billion for EU companies. European business R&D remains anchored in sectors such as automobiles, while American firms moved decisively into software and biotechnology. At home, we must complete the single market, fund high-risk innovators rather than large consortia and promote innovation hubs. Abroad, CORE lets us pool strengths with partners through open-source models and diversified supply chains for chips and compute.

GREEN: PRECISION OVER ALARM

Geopolitics changes the green transition in the same way: the question is no longer only how fast to decarbonize, but on whose supplies. On energy, Europe has already shown what autonomy looks like, decoupling rapidly from Russian fossil fuels. China is the harder case, but the picture is more precise than the alarm suggests. It supplies about half of the EU's imports in the electrification basket, but two-thirds of the "Green Core" goods, such as batteries, solar panels and electric vehicles, while Europe remains a net exporter of grid equipment. The task is targeted: secure the specific materials where dependence is concentrated, through domestic capacity and calibrated screening of investment. Here CORE reaches its limit, because China is not a like-minded partner, and Europe needs the looser tier of partnerships with resource-rich countries.

DEMOGRAPHY: WHAT WE NEED, WHAT WE PROMISED

Demography meets geopolitics through migration, now a lever in Europe's relations with the Global South. A shrinking workforce means Europe will need workers, and AI is no substitute for a labor strategy. Yet the trend is towards tighter borders. Can Europe reconcile what it needs with what it has promised? Principled labor-mobility partnerships with the Global South could be part of the answer, and a natural extension of the looser tier. This is where our work is least developed, and I expect it to be the hardest.

MAKING CORE WORK TAKES EVIDENCE

The pattern is the same across all four: Europe's strengths are undercut by fragmentation and unilateralism. The remedy is not a louder EU imitating the great powers, but a more central one. Making CORE work will take hard choices, and those choices must be grounded in rigorous, independent research. That is the mission of the Institute for European Policymaking @ Bocconi University.

AI, ENERGY AND MIGRATION ARE NOW ARENAS OF DEPENDENCE AND LEVERAGE, AND FOR EACH WE MUST ASK WHAT EUROPE CAN DO ALONE AND WHAT IT CAN ONLY DO WITH PARTNERS

Society Has Changed. The Social Contract Has Been Left Behind



We live longer, study more, and have opportunities that were unthinkable for previous generations. Yet as the world becomes increasingly diverse, insularity and nostalgia for the past are on the rise. Francesco Billari explains why the real risk isn't diversity—it's wasting the talents it can unleash. And why we need new rules for living together

by Barbara Orlando

We've gained 33 years of life expectancy in a century, opened universities to millions of people and shattered barriers that for generations determined the fate of women and men. Yet, instead of looking ahead, we seem drawn to a past we imagine to be safer. It's the paradox of contemporary societies: they have never been so open, and yet never so tempted to close themselves off. In his new book, *Iperdiversità. Le rivoluzioni che hanno cambiato il nostro modo di vivere assieme* (Sellerio, 2026), Francesco Billari, demographer

FRANCESCO BILLARI
Full Professor of Demography and Rector, Bocconi University

NOSTALGIA BECOMES DANGEROUS WHEN IT TURNS INTO A POLITICAL AGENDA

and Rector of Bocconi University, shows how longevity, education, gender equality and migration have multiplied the talents that can contribute to progress. But he warns: the benefits are not automatic, since institutions have often remained partly trapped in the last century. That is why it is not enough to simply celebrate differences. We need a new social contract — one capable of transforming these differences into opportunities and ensuring that those who bear the costs of change are not left behind.

The world has never been so open. So why are we so afraid of the future?
Because we have a selective memory. We focus on today's problems — which are real — and forget the ones we've overcome. In Italy, over the past century, life expectancy has increased by more than 30 years: it's as if we'd gained eight hours a day, every day. For millennia, countless children did not reach adulthood; education was a privilege reserved to the few, and being born a woman or into a poor family could almost entirely determine one's fate. I'm not saying that everything is fine today. I'm saying that the past is not the solution. Nostalgia becomes dangerous when it turns into a political agenda. Otherwise, we end up calling even those achievements — which we have not yet learned to manage — a crisis.

If openness has helped us progress, why has it become a political target?
Because the benefits are often widespread and long term, while the costs can be immediate and concentrated on certain people. And here, two mirror-image mistakes are made. The first is to find a scapegoat: immigrants, women advancing in society, young people, the elderly. The second is to dismiss those who are afraid as ignorant or backward. Remember Hillary Clinton's use of the term "deplorables" during the 2016 US presidential campaign. If you want to convince someone, you can't start by looking down on them. An open society defends itself by distributing the opportunities and costs of change equitably. Inclusion must also extend to those who today feel defeated by openness.

We're living longer, yet we continue to pit young people against the elderly. Isn't that a paradox?
It's a paradox that stems from institutions designed for a pyramid-shaped population, with many young people and few older adults. Today, numerous generations with very different experiences coexist. Take Brexit: many young Britons wanted to remain in the European Union, but they'll have to live longer with a decision they didn't support. There's a problem of representing the future — not just regarding pensions. Age stereotypes also persist in the workplace. In the book, I describe a research group that developed a 3D metal printer: the key was combining the programming skills of the younger members, the expertise of the faculty and the practical experience of the older researchers. Longevity has given us this collaboration, not a war between the generations.

In the book, you talk about the "Einsteins" and "Marie Curies" we've lost. How much

BENEFITS ARE OFTEN WIDESPREAD AND LONG-TERM, WHILE COSTS CAN BE IMMEDIATE AND CONCENTRATED ON CERTAIN GROUPS. AN OPEN SOCIETY MUST DEFEND ITSELF BY DISTRIBUTING BOTH OPPORTUNITIES AND COSTS OF CHANGE FAIRLY

talent are we continuing to waste?
Too much. In the United States, those born into the top 1% of households are about 10 times more likely to become inventors than those born into the bottom half. Katalin Karikó, who grew up in a modest family in Hungary, helped make mRNA vaccines possible and went on to win the Nobel Prize. How many potential Karikós can't even get started? Family background

IT'S NOT ENOUGH TO TELL YOUNG PEOPLE, "IF YOU'RE GOOD ENOUGH, YOU'LL MAKE IT." WE MUST ASK OURSELVES HOW MANY DO NOT HAVE A CHANCE

continues to play a role even among those with the same degree, through connections and financial resources. For a university, the real challenge is balancing high quality with access to talent. At Bocconi, the stories told through the "We Made It" campaign illustrate precisely this: behind every successful journey lie individual commitment, family support, and encounters and opportunities made possible in part by the University itself. It's not enough to tell young people, "If you're good enough, you'll make it." We must ask ourselves how many we aren't even giving the chance to try.

Women study more than men, but Italy still fails to make use of their labor. And meanwhile, fewer and fewer children are being born.
This is a sign of a revolution left half finished. We've opened up education to women, but work, services and family care haven't changed to the same extent. We've asked women to behave like men in the labor market, while continuing to assign them the bulk of domestic responsibilities. In countries that truly allow for a work-life balance, female labor force participation can be high without depressing birth rates. In Italy, we continue to debate how many children people should have. The real question, however, is this: why do we make it so difficult for them to have the children they want? If a country invests in women's education and then hinders their economic independence, it doesn't just lose out in terms of equity. It wastes a portion of its human capital.

Diversity enriches our cities. But does living close together really mean living together?
No. A city can be hyper-diverse yet deeply segregated. All it takes is for people of different backgrounds to live in separate neighborhoods, attend different schools and not share the same spaces. Yascha Mounk uses a metaphor that I find effective: society as a public park. You go there with your friends; you can keep to yourself, but you also have the opportunity to meet someone new. We need to prevent invisible barriers from rising. Cities have fostered innovation precisely because they have brought together different kinds of knowledge, experiences and backgrounds. Milan knows this well. But if housing, schools or access to services permanently divide people, the potential of diversity remains merely theoretical. Coexistence isn't created by decree — it must be fostered.

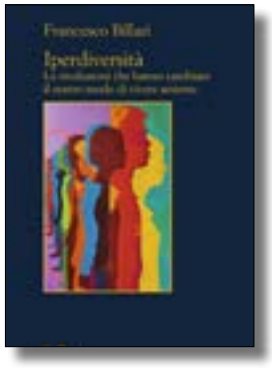
If everyone has a unique life path, does a welfare system built around categories still make sense?
Categories are useful, but they do not fully describe people. Two 60-year-olds can have very different lives: in terms of health, work, family, income and expectations. That is why I propose a universal safety net, accompanied by specific responses to the vulnerabilities that arise over the course of a lifetime. There's also an uncomfortable truth about merit. Effort matters — and how. But no one chooses their parents, the health they'll have or all the crises they'll have to face. No one is capable of perfectly controlling their

IF WE ATTRIBUTE EVERY SUCCESS TO MERIT AND EVERY FAILURE TO INDIVIDUAL FAULT, WE END UP JUSTIFYING INEQUALITIES INSTEAD OF UNDERSTANDING THEM

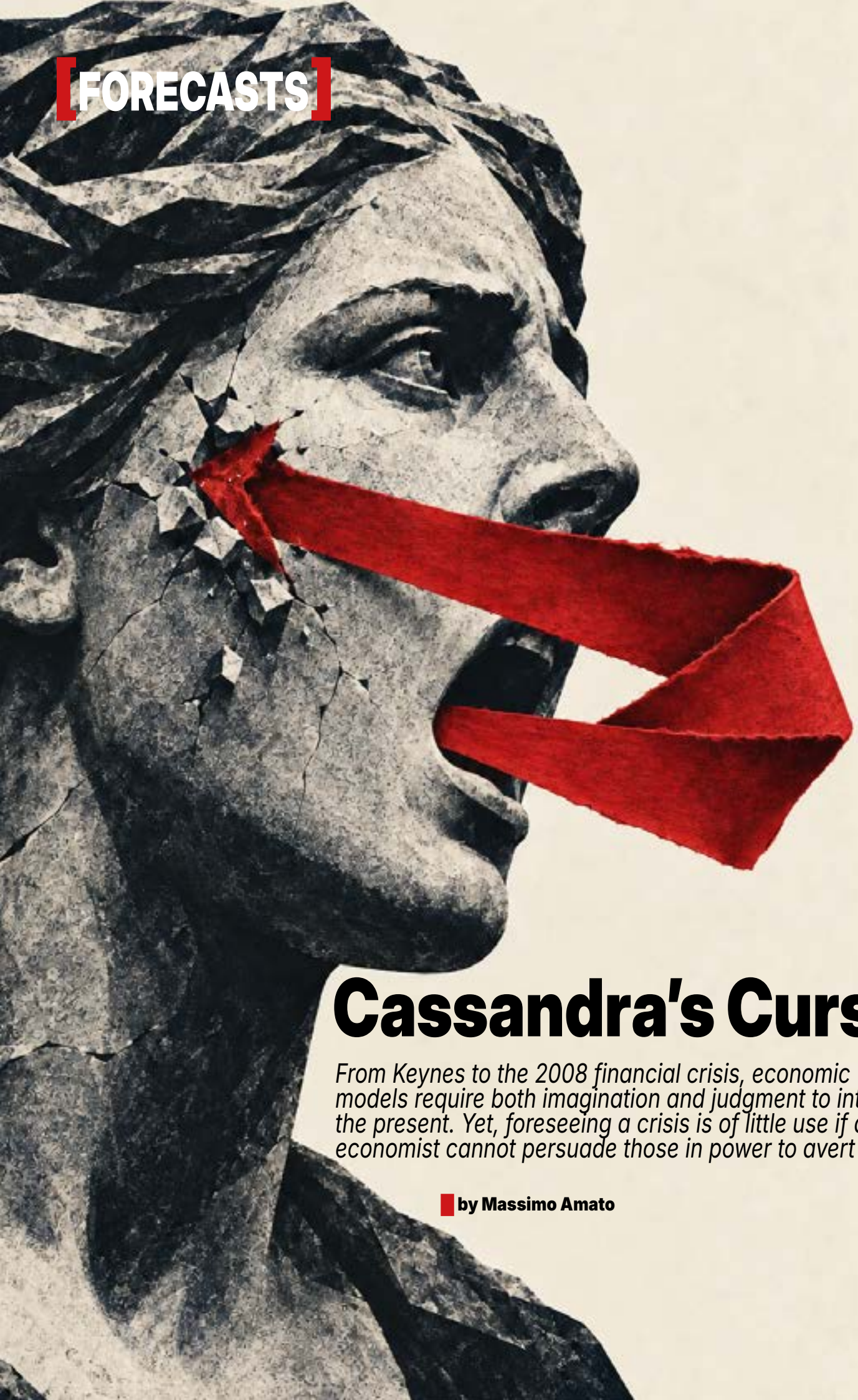
own destiny. If we attribute every success to merit and every failure to individual faults, we end up justifying inequalities instead of understanding them. An open society must offer second chances, not just a race at the starting line.

The book calls for a new social contract. Where do we start from, in practical terms?
By choosing not to shape the future through nostalgia. First: invest in people, starting in childhood, without interrupting their education when they enter the workforce. Over the course of a long life, returning to school should be the norm, not an exception reserved for a privileged few. Second: build safeguards that address actual vulnerabilities, rather than merely defending administrative categories and standard pathways. Third: give weight to the long-term consequences of public decisions. Debt, the environment, education and infrastructure also affect those who do not vote today — or who have not been born yet. The new social contract is not just a slogan about inclusion: it requires fiscal, organizational and institutional choices. These are investments that enable people to contribute more, the economy to innovate and democracy to remain credible. Otherwise, we are blaming people for the failures of institutions.

Which would be the more serious failure: failing to manage our differences or missing out on the opportunities they offer us?
The two are closely linked, but I believe the greatest risk is turning our backs on the possibilities before us. For millennia, human history has also been a history of wasted talent. Children who did not survive, women who were prevented from getting an education, people whose destinies were determined by their families or places of birth. Today we have the opportunity — still incomplete but extraordinary — to change this history. This does not mean that everyone must become a scientist, an entrepreneur or a Nobel laureate. It means allowing everyone to develop their own abilities and contribute to society, in accordance with their own aspirations. In the book, I begin with a quote from Newton: “If we have seen further, it is by standing on the shoulders of giants.” But today we can greatly increase the number of those giants. The future is not set in stone, and it will not necessarily be better. It will depend on the choices we make. Diversity is a historical achievement. Turning it into an opportunity for everyone is the responsibility that lies before us.



THE BOOK. *What happens when millions of lives stop following a predetermined path? In* Iperdiversità. Le rivoluzioni che hanno cambiato il nostro modo di vivere assieme *(Sellerio, 2026), Francesco Billari weaves together demography, history and economics to explore four decisive transformations: longevity, education, women’s emancipation and migration. What emerges is a world of increasingly diverse paths, where talent can flourish in places that were once excluded. But openness does not govern itself: to transform it into shared progress, we need institutions, social welfare systems and policies capable of changing alongside people.*



Cassandra's Curse

From Keynes to the 2008 financial crisis, economic models require both imagination and judgment to interpret the present. Yet, foreseeing a crisis is of little use if an economist cannot persuade those in power to avert it

by Massimo Amato

Have we perhaps grown too accustomed to the idea that the forecasts made by economists are only sound when they are derived from formal models? Where do these models come from? And what model of science should economics follow? Can we entrust our future to calculations — perhaps even those generated by artificial intelligence?
Back in the 1980s, Claudio Napoleoni warned that if economics is reduced to the paradigm of the natural sciences, something essential is lost, something vital to understanding the realities of the social world. This serves as a cautionary note regarding what we should expect from economic science, a point even more relevant today.



MASSIMO AMATO
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A FAILURE OF IMAGINATION

In November 2008, at the London School of Economics, Queen Elizabeth II asked why no one had seen the crisis coming. The answer arrived the following July in a letter from the British Academy, which cited a "failure of collective imagination," namely an inability to recognize the risks inherent in the financial system as a whole.
But is "collective" the right adjective? Was it merely a matter of a shared failure, or are the very conditions of knowledge at stake here? For Kant, transcendental imagination plays a constitutive role in knowledge through "schematism," that "art hidden in the depths of the human soul" which enables the application of concepts to sensory intuitions. Before it can even allow us to make forecasts, imagination establishes the very conditions for knowledge to exist.

THE ART OF CHOOSING BETWEEN MODELS

The word "art" reappears in the 1938 correspondence between Keynes and Roy Harrod: economics is a science that thinks in terms of models, combined with the art of selecting those that are relevant to the present. Such a choice requires an "intimate and messy acquaintance" with stubborn facts. This art precedes and accompanies economic calculation, defining the boundaries within which it operates.
Economics, in fact, deals with motivations, expectations and uncertainty. It is as if, says Keynes playfully, the falling of Newton's apple depended on the apple's own intentions, calculations and even its own errors. Human beings act based on their expectations, thereby transforming the future they seek to anticipate into the present. While expectations can be modeled, not everything can be fully translated into calculable probabilities.
There remains an element of fundamental uncertainty that demands judgment, not merely calculation.
In a 1935 letter to a student, Keynes criticized the "scholasticism" stifling the intuitions of economists.
Writing about economics also means eliciting intuitions in the reader and appealing to them; when such intuitions no longer remain, Keynes remarked, "one is helpless."

WHEN THE PROPHECY FAILS TO PERSUADE

The art to which Keynes refers must, however, contend with a second challenge: making one's insights accessible to others so they can share them and act on them. In his 1931 preface to Essays in Persuasion, Keynes describes himself as a Cassandra unable to influence the course of events over time: "for the Prophecy, unfortunately, has been more successful than the Persuasion."
This bitterness is understandable: an economic Cassandra, when announcing an avoidable catastrophe, ought to hope that the effectiveness of her warnings will ultimately prove her own prophecy wrong.
Let us return, then, to the Queen. The British Academy's

ECONOMICS DEALS WITH MOTIVATIONS, EXPECTATIONS AND UNCERTAINTY. IT IS AS IF, AS KEYNES JOKES, THE FALL OF NEWTON'S APPLE DEPENDED ON THE APPLE'S OWN INTENTIONS

letter acknowledged that there had been no shortage of warnings, yet politicians, financiers and regulators alike shared an excessive confidence in their ability to manage risks. Keynes offered a key to interpreting this convergence: "Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist." So currently living Cassandras may see their warnings unheeded, while the long-dead continue to rule through ideas that have come to be mistaken for self-evident truths.

BEING SURPRISED BY REALITY

A process of reflection has begun also within the mainstream of the discipline: Olivier Blanchard has acknowledged the limitations of dominant models, advocating for their improvement and calling for diverse tools for different purposes. Regarding simpler models, those used for reasoning and employed in teaching, he even writes that they are as much an art as a science, and that not all economists are artists.

As multiple crises become increasingly intertwined and the coordinates of our world shift rapidly, our vigilance must be redoubled, lest confidence lead to overconfidence. Collective imagination can foster shared knowledge and persuasive forecasts; yet, it can also harden into a blinkered form of in-crowd mentality, a collective myopia that afflicts both those developing these models and those who rely upon them to guide their decisions. The art of forecasting the future starts with a willingness to let oneself be surprised by emergent reality, and it continues with the ability to reveal that reality to others.





Assessing a Merger Takes Time

Mergers approved by the European Commission are, on average, neutral for consumers, but around 15% of those analyzed were found to have had anticompetitive effects. Studying their outcomes can help improve future assessments

by Vincenzo Alfano, Christoph Carnehl

When reviewing a merger, competition authorities must assess its effects on consumers before these can be observed. They rely on information about existing market conditions and predictions about how the merger may affect future competition, innovation and efficiencies. Such assessments are necessarily uncertain. Yet, while considerable resources are devoted to

evaluating mergers before approval, their effects on consumers are examined much less systematically afterwards.

THE CHALLENGES OF EX-POST MERGER EVALUATIONS

One reason for the limited use of ex-post evaluations is the difficulty of measuring the effects of mergers on consumers. Detailed studies often require extensive data, making them difficult to conduct across many mergers and industries. Broader evaluations therefore tend to focus on reduced-form outcomes such as prices or markups.
In our recent work, we develop a simple approach that allows evaluating the consumer-surplus effects of mergers across time and industries with minimal data. We show that, under a commonly-adopted model of competition between multiproduct firms, changes in the merging parties' combined revenues relative to what would have happened without the merger reveal whether a merger was anticompetitive. Applying this approach to European Commission mergers, we find that approved mergers are on average consumer-surplus neutral. However, there is substantial heterogeneity: around 15% of the mergers in our sample were estimated to be anticompetitive.



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THE PAPER.
A Sufficient Statistics Approach to Merger Evaluation, *by Vincenzo Alfano, Christoph Carnehl, Konrad O. Stahl*



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ANTICOMPETITIVE OUTCOMES DO NOT NECESSARILY MEAN FLAWED DECISIONS

These findings do not necessarily imply that the mergers in question should have been prohibited.
As the merger decisions are made under uncertainty, an anticompetitive outcome does not by itself indicate a flawed assessment. Instead, realized outcomes provide an opportunity to examine which information available before the decision helps predict merger effects.
Such evidence can then be used to evaluate and improve the tools on which future merger assessments rely.
Concentration screens used to identify mergers that may require closer scrutiny are one example. Based on market shares and other measures of market concentration, such screens serve as simple indicators of potential competition concerns. They help authorities allocate their limited resources to possibly harmful cases. However, to assess whether existing screening rules successfully identify proposed mergers that subsequently harm consumers, a broad ex-post assessment of approved mergers is necessary.
For example, a majority of cases that we classify as anticompetitive did not undergo an in-depth investigation by the authority.

AROUND 15% OF THE MERGERS IN OUR SAMPLE WERE ESTIMATED TO BE ANTICOMPETITIVE

ASSESSING MERGER SCREENING RULES IN THE EU AND US

To assess the screening rules employed in EU and US merger guidelines, we relate them to the estimated consumer-surplus effects. Our objective is not to flag more mergers, but rather to suggest screening rules that better identify cases that should undergo closer scrutiny, thereby improving the allocation of constrained resources.

The ongoing revision of the European Commission's Merger Guidelines provides an opportunity to extend this approach beyond concentration screens. For example, merging firms often argue that the merger will lead to cost improvements that will offset the increase in market power, while authorities frequently approve mergers subject to negotiated remedies to address competition concerns.

Broad ex-post evaluations could examine whether and which arguments and remedies are systematically associated with procompetitive outcomes.

USING PAST MERGER DECISIONS TO IMPROVE FUTURE COMPETITION POLICY

Much of the necessary information is already recorded in the published merger decisions, and document the concerns raised and the reasoning behind approvals. Rather than treating these documentations primarily as records of past decisions, authorities could combine them with estimated consumer outcomes to evaluate their past reasoning.

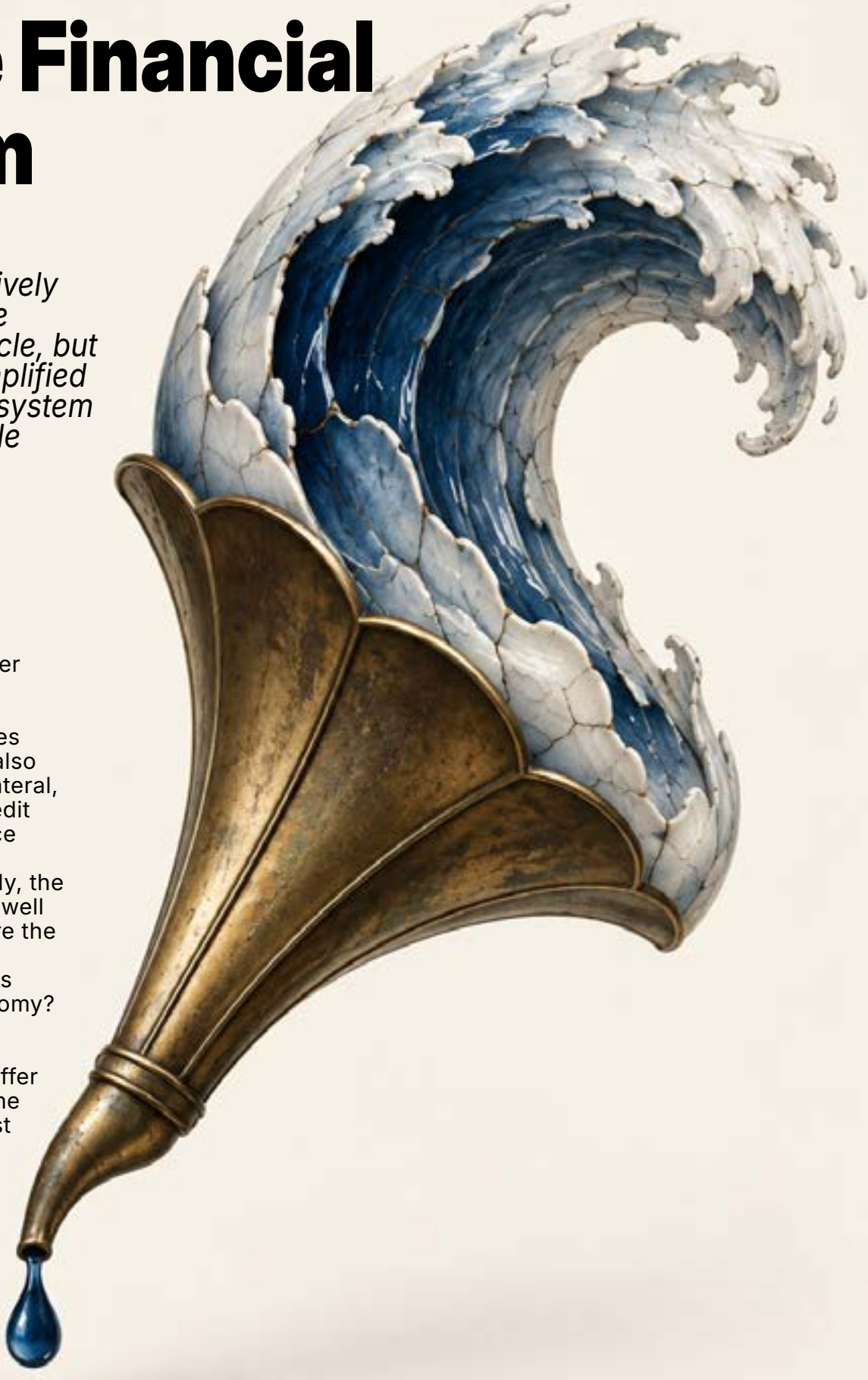
Of course, such broad retrospectives cannot replace the detailed assessment of individual cases or eliminate the substantial uncertainties involved. Instead, they would allow authorities to evaluate and reassess their policy instruments, using evidence from past mergers to guide future merger policy.



When Bad Weather Hits a Fragile Financial System

Extreme weather events have a relatively minor impact on the macroeconomic cycle, but their effects are amplified when the financial system is already vulnerable

by Barbara Orlando



An extreme weather event does more than just destroy buildings, facilities or infrastructure. It can also reduce the value of collateral, weaken banks, make credit more expensive and force businesses to postpone investment. Consequently, the damage risks spreading well beyond the locality where the event occurred.

But how significant is this mechanism for the economy? And do the effects of a hurricane, a drought or extreme temperatures differ depending on whether the financial system is robust or undergoing a crisis?

A new study provides a clear answer: financial conditions determine an economy's capacity to absorb such shocks. An event of similar

intensity may have limited consequences in normal times, yet it can engender far more severe impacts when banks and markets are already under strain. This does not mean, however, that heavy weather is a primary driver of recessions. These are the findings of *Severe Weather and Financial (In)stability*, a working paper by **Claudia Foroni** (European Central Bank), **Paolo Gelain** (Federal Reserve Bank of Cleveland), **Marco Lorusso** (University of Perugia and Newcastle University Business School) and **Massimiliano Marcellino** (Bocconi University). The study utilizes monthly US data from 1992 to 2019, distinguishing between periods of financial stability and periods of financial instability, the latter largely corresponding to the Great Recession of 2007–2009.
"The point is not to simply measure the direct damage caused by a severe weather event," explains Massimiliano Marcellino, Director of the Baffi Research Center on Economics, Finance and Regulation at Bocconi University. "It is necessary to understand what happens next: if the deterioration of productive capital weakens banks, restricts credit and further reduces investment, the initial shock is amplified."

FINANCIAL FRAGILITY ACTS AS A MULTIPLIER

The author used the Actuaries Climate Index to determine anomalies in temperatures, precipitation, drought, wind and sea level, and measure the relation with respect to real and financial variables.
In conditions of financial stability, a severe meteorological shock reduces GDP growth by less than 0.05% and investment by less than 1%. The net equity of the bank decreases by approximately 1%, while credit differential increases by just a few basis points. When the financial system is conversely unstable, the shock has a very large effect: GDP decreases by more than 0.2% and investment by more than 4%, while the net equity of the bank decreases by 15% and the credit differential rises by 35 basis points.
"It is not the nature of the event that changes, but the condition of the economy which is struck by it," Marcellino observes. "When banks are more highly leveraged and have reduced margins to absorb losses, even circumscribed damage can lead to less credit and a marked reduction in investment."
It is the effect of the so-called financial multiplier. The loss of capital reduces production and impairs banking assets. Banks restrict loans or make them more expensive; firms postpone investment, thus amplifying the initial slowdown.



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THE PAPER. Severe Weather and Financial (In)stability, *by Claudia Foroni, Paolo Gelain, Massimiliano Giuseppe Marcellino, Marco Lorusso*

CAPITAL MATTERS MORE THAN PRICES

Among the diverse channels of transmission considered, one dominates all the others, and this is the effect of the deterioration in the quality of capital. A damaged plant does not only reduce production capacity: it reduces its worth as collateral, can generate losses and limit the capacity of the bank to give credit to other businesses.
The effect on prices is much more limited. The shocks analyzed prove to be mildly deflationary, but the change in inflation is in the order of just a few basis points, as is the estimated response of monetary policy.
"In our model, extreme meteorological events have a stronger effect on real macro variables and investment than on inflation," says Marcellino. "At least in the period and context of the analysis, the

WHEN BANKS ARE MORE HIGHLY LEVERAGED, EVEN LIMITED DAMAGE CAN LEAD TO REDUCED CREDIT AND LOWER INVESTMENT

THE FINANCIAL SECTOR IS NOT THE SOURCE OF METEOROLOGICAL DAMAGE, BUT IT CAN AMPLIFY ITS CONSEQUENCES

effects on price stability appear negligible."

A SERIOUS RISK BUT NOT A CAUSE OF RECESSION

Precision is important. Meteorological shocks account only for 0.2% of the variance in GPD in periods of stability, and no more than 3% in periods of instability. They therefore remain a secondary factor in affecting the economic cycle: it would not be correct to consider them, on their own, a systemic threat comparable to the primary causes of financial crises.
Furthermore, an analysis of individual components of the index reveals differential effects of weather events. Shocks related to temperature and sea level result in the sharpest contractions of GDP, particularly during periods of instability, with an estimated decline of 0.4%–0.6% at the peak of the shock. Droughts and wind have more limited consequences. Also in this case, no single component accounts for more than 3% of overall economic fluctuations.

STRENGTHENING THE CAPACITY TO ABSORB SHOCKS

The primary takeaway for institutions and policymakers is acting in ways that prevent losses caused by adverse weather from hitting already fragile intermediaries, something which could trigger a downward spiral involving asset devaluations, credit tightening and a decline in investment.
For supervisory authorities, these findings suggest incorporating physical risk into assessments of the soundness of financial intermediaries, with a particular focus on leverage, the geographic concentration of financial exposure and the quality of collateral. Climate-related stress tests should also consider subsequent effects on the credit supply. Banks and insurance companies must have knowledge of where the assets they are financing are located and the extent of their exposure to physical risks. For central and local governments, investing in the resilience of infrastructure and production capital can help limit financial repercussions.
For central banks, the paper suggests a distinction between price stability and financial stability. While the impact on inflation is modest, the effect on credit depends on initial conditions. Consequently, the policy response may lie less in interest rate adjustments and more in macroprudential prevention.
The core message is that while the financial sector is not the source of meteorological damage, it can amplify its consequences. A more robust financial system makes the overall economy also more resilient to extreme weather shocks.



The Average Is No Guarantee of Safety



Among the European disasters analyzed, the most severe 5% account for 64% of economic losses. Extreme value statistics can help assess scenarios beyond past records and guide climate adaptation policies

by Simone Padoan

THE MOST SEVERE 5% OF EVENTS GENERATE 64% OF TOTAL ECONOMIC LOSSES. TO MANAGE RISK, EXTREMES ARE WHAT MATTER MOST

The 2021 floods in Germany and Belgium caused €47 billion in damage and more than 200 deaths; the summer of 2003 remains the hottest in Europe in centuries. Analyzing over 4,000 climate events recorded between 1980 and 2023 in 32 European countries, together with **Carlotta Pacifici** (Bocconi's Baffi Research Center) and **Jaroslav Mysiak** (CMCC Foundation and Ca' Foscari), we show how unbalanced disasters are: the most severe 5% of events generate 64% of total economic losses, while the least severe 75% account for just 7%. To manage risk, extremes are what matter most. Yet adaptation policies are often based on studies that consider average values.

THE STATISTICS OF RARE EVENTS

The tool we used, published in the *Journal of the Royal Statistical Society*, is extreme value theory. Rather than looking at all the data, it focuses only on the "peaks," the events that exceed a very high threshold. Like an engineer who designs a levee with the worst flood in mind rather than the river's average level, this approach learns from the shape of the "tail" of the data and makes it possible to reason about values never observed before. The result is clear: for both losses and fatalities the tails are heavy, meaning that catastrophic events, though rare, are far from impossible.

TWO KINDS OF UNCERTAINTY

The main novelty is the shift from estimation to prediction. Classical approaches measure how uncertain we are about the model's parameters, that is, about what we do not know. But there is also chance: the unpredictable nature of the next event. The method, which is Bayesian, accounts for both sources of uncertainty and produces prediction intervals roughly twice as wide as traditional ones. Ignoring this component means underestimating risk.

WHAT IF IT HAPPENED TOMORROW?

The tool enables "what if" analyses. If a disaster among the 1% most severe in history were to strike Europe tomorrow, the damage would lie, with 95% probability, between about €5 and €37 billion. This range includes the all-time record: the €35 billion recorded in a single day in Germany in July 2021. In other words, that record could happen again.



SIMONE PADOAN
Associate Professor, Department of Decision Sciences, Bocconi University

THE PAPER. Predicting hazards of climate extremes: a statistical perspective, *by Carlotta Pacifici, Simone A Padoan, Jaroslav Mysiak*

A CHANGING CLIMATE

We also took into account that the frequency of extreme events varies over time. The frequency of peak fatalities, after declining between 2003 and 2018, has started to rise again. Even allowing for these changes, the forecasts remain worrying: in 2025 an extreme event could cause between approximately €4 and €34 billion in damage.

THE REALITY CHECK

The data used ended in 2023. The year 2024 provided a test: the Valencia flood, with more than €17 billion in damage, and the heatwave in Spain, with over 12,000 deaths, both fall within the intervals predicted by the model. This is a concrete confirmation of its reliability.

FROM RESEARCH TO POLICY

The message for the European Union is clear: adaptation strategies must include tail risks, those that are rare but devastating. The tools developed are freely available in the ExtremeRisks software package and can help governments, insurers and civil protection agencies prepare for the worst, not just for the average.

15 min Break



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Where Pain Finds a Listening Ear

For people living with a chronic illness, sharing experiences, advice and information online can help ease feelings of isolation. A Bocconi study explores how platforms can provide support, without ignoring the risks they may pose

by Stefania Borghini and Beatrice Medici

According to the World Health Organization (WHO), loneliness affects one in six people worldwide and is associated with an estimated 871,000 deaths a year: around 100 every hour. The problem takes on a particular dimension for people living with a chronic illness, because loneliness can become persistent and intertwined with the everyday experience of being ill.



STEFANIA BORGHINI
Associate Professor of Marketing, Bocconi University



BEATRICE MEDICI
Academic Fellow, Department of Marketing, Bocconi University

The WHO itself identifies chronic illness among the factors that fuel isolation, in a cycle in which illness and loneliness reinforce each other. This is what happens with endometriosis, where physical suffering is often compounded by the pain of not feeling understood, believed or acknowledged. According to the WHO, endometriosis affects roughly 10% of women of reproductive age worldwide; in Italy, an estimated 3 million women live with it, and diagnosis takes seven years on average. Years of pain, delayed diagnoses, symptoms that are hard to explain and an illness that often remains invisible to others can lead to profound isolation. Not being believed, constantly having to justify one's own suffering or finding no one who understands what one is going through can weigh as heavily as the illness itself.

In this context, social media networks present an interesting paradox. Public debate describes them as one of the causes of the growing "loneliness epidemic." Yet a different story emerges when we look at digital communities devoted to endometriosis.

A study we conducted with Rossella Gambetti, published in *Psychology & Marketing*, analyzed 38 social media pages and profiles dedicated to endometriosis and conducted 20 interviews with patients, doctors, influencers and experts to understand how these platforms help people cope with the loneliness that comes with chronic illness.

THE PAPER. Lonely and Sick: The Role of Social Media in Consumer Practices of Relief, *by Beatrice Medici, Stefania Borghini, Rossella Gambetti*

FOUR PRACTICES AGAINST LONELINESS

The findings show that relief extends beyond the screen through four interconnected consumption practices.

The first is grounding: content and conversations lead people to discover consumer objects and routines — from hot-water bottles to clothes suited to bloating — that make everyday life more manageable. Individual solutions thus become shared rituals of care.

The second is sense-making. Doctors, associations and patients translate clinical terms, explain symptoms and circulate experiences. Consuming and sharing knowledge allows people to interpret their symptoms, fill

IN THESE DIGITAL COMMUNITIES, PAIN CEASES TO BE A PURELY PRIVATE EXPERIENCE AND BECOMES SOMETHING THAT CAN BE TOLD, UNDERSTOOD AND ACCOMPANIED

BRANDS, HEALTHCARE PROFESSIONALS, PATIENT ASSOCIATIONS AND PLATFORMS SHOULD AVOID BOTH IDEALIZING AND DAMNING SOCIAL MEDIA

the gaps left by healthcare pathways and make sense of their condition together with others.
With the third practice, attuning, consumption becomes emotional. Saving a post, answering an anonymous question or commenting on a testimony gives shape and visibility to private pain. Relief does not come from symptoms disappearing, but from someone recognizing them without the need to explain oneself over and over again. Finally, inspiring concerns symbolic consumption, which turns personal stories into models of identity and narratives of endurance and possibility. Experiences become resources for imagining a future and countering stigma.

WHEN CONSUMPTION BECOMES RELIEF

The four practices reinforce one another. A piece of content suggests a routine; the routine prompts a testimony; the testimony offers recognition and hope. Consumption is not a solitary form of compensation, but a collective process involving objects, knowledge, emotions and identities that provides mutual recognition, shared knowledge, empathy and participation. In these digital communities, pain ceases to be a purely private experience and becomes something that can be told, understood and accompanied. Sometimes the first step toward feeling better is not for the pain to disappear, but to know that someone else understands it.
Yet the dynamic remains ambivalent. Platforms can spread remedies that lack evidence; visibility can turn into overexposure. And the "endowarrior" rhetoric, by demanding that women always appear strong, can delegitimize fatigue and fear.

DESIGNING ECOSYSTEMS OF RECOGNITION

For brands, healthcare professionals, patient organizations and platforms, the lesson is to avoid both idealizing and condemning social media. What is needed is verifiable information and spaces that allow different levels of exposure: from privately saving content and asking anonymous questions to sharing publicly. Health influencers are not mere content producers. They become guides, interpreters and emotional companions. In chronic illness, relief does not necessarily mean recovery. It can mean cautiously reentering social relationships and discovering that one's pain, while still real, no longer has to be lived alone.

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INQUADRA IL QR CODE PER SCARICARE E LEGGERE LE FAVOLE

[DECISIONS]

The Cost of Knowing Too Late

In the emergency room, having test results available immediately reduced both costs and waiting times. This is a lesson for the AI era: alongside the quality of data and algorithms, what matters is ensuring that information reaches decision-makers in time to inform their choices

by Miguel Andres Espinosa Farfan



In the age of AI, what makes data valuable? We usually point to volume, quality and smarter algorithms. But another factor receives far less attention: timing. The right information can lose much of its value if it reaches the right person too late.

DECISIONS ARE A SEQUENCE

This matters because decisions are rarely made in one step. Managers, doctors and product teams gather an early signal, interpret it, ask a new question and decide what to examine next. Information is part of a sequence. Speeding up one signal can change the whole path.

We saw this clearly in a hospital emergency department. Physicians ordered laboratory tests, but they were not told when results became available. To check, they had to log into an internal system and move through several screens. In a busy ward, this created friction and delay.

Then one of two adult wards introduced a real-time dashboard. It displayed when test results were ready. It did not produce new information, improve the tests or make the laboratory faster. It simply made information easier to access when it became available.

FEWER TESTS, MORE TARGETED DECISIONS

That change had large effects. Looking at more than 64,000 decisions made by 387 physicians, we found that doctors ordered fewer and more targeted tests.



MIGUEL ANDRES ESPINOSA FARFAN
Assistant Professor, Department of Management and Technology, Bocconi University

THE PAPER.
How data velocity changes decisions: The role of information access speed, *by Miguel Espinosa, Hyunjin Kim, Sergio Prada*

Charges fell by 25%. Patients spent 13% less time in the emergency department, about 75 minutes. Yet faster decisions did not mean worse care. Hospitalizations declined without an increase in readmissions, while patient satisfaction rose.

Why? Faster access allowed physicians to use early results while the details of a case were fresh. They could resolve uncertainty sooner and choose the next test more precisely, instead of ordering a broad set of tests in advance or repeatedly checking for updates. They used less information, but used it better.

The gains were strongest when workloads were high and cases were less common. These are the moments when attention is stretched and uncertainty is greater. Speed was valuable not because it pushed doctors to rush, but because it helped them focus.

THE LIMITS OF AN INSIGHT THAT ARRIVES TOO LATE

For organizations investing in AI, the race is often framed as a contest to collect more data, build stronger models and generate better predictions. Those investments matter.

But even an excellent insight has limited value if it remains buried in a system, arrives after the decision or takes too much effort to retrieve.

Competitive advantage may therefore depend on a quieter capability: designing the flow of intelligence around the rhythm of human decisions. Who needs the signal, at what moment and to enable what action? The winners may not be those with the most sophisticated algorithms, but those that deliver the right information at the right time, helping people ask better questions and make better choices.

THE RIGHT INFORMATION CAN LOSE MUCH OF ITS VALUE IF IT REACHES THE RIGHT PERSON TOO LATE



Expanding While Staying True to Mission

Bringing a social service to new areas requires training, shared regulations and local autonomy. This balance allows for more impact while preserving the quality, accessibility and sustainability

by Giuliana Baldassarre

Every project that generates social value carries with it the ambition to expand its reach and amplify its impact. However, its growth trajectory presents a major challenge: scaling up the model without losing the identity, mission and values that drove its initial success. In other words, it is necessary to strike a balance between remaining faithful to the original project and being able to adapt to various contexts and to reach a larger number of beneficiaries. Precisely to address this need, social franchising serves as a particularly effective tool to satisfy both requirements.

HOW SOCIAL FRANCHISING WORKS

The social franchising model is characterized by two main types of actors: the franchisor and the franchisee. The franchisor is the organization that owns the service model and is responsible for its establishment, standardization and transfer

— which includes providing management, training and operational support to the affiliates. Franchisees are the organizations or individuals that adopt and implement the model in their local contexts, helping to expand its reach.

THESE MODELS REQUIRE A BALANCE BETWEEN FRANCHISOR OVERSIGHT AND FRANCHISEES' LOCAL AUTONOMY TO ENSURE QUALITY AND ADAPTATION TO LOCAL CONTEXTS

TWO MODELS TO REPLICATE SOCIAL SERVICES

Franchisees may be individuals on their own, or organizations already operating as service providers. The literature distinguishes between two main models of social franchising (Montagu, 2002). The first is standalone, in which franchisees focus exclusively on delivering the services defined by the franchisor, without engaging in other activities, thus concentrating their resources on that operating model. The second is fractional, in which affiliates already running a business or social initiative add a new franchised service to their portfolio to broaden their offering.
The goal of the latter is to support the expansion and replication, in whole or in part, of a service format defined by the franchisor, thereby helping to meet social needs across numerous areas through the work of franchisees. This does not mean that there are no economic objectives to be met, but rather that they remain secondary to the social objectives that constitute the primary purpose of the social franchising agreement.

EIGHT CRITERIA TO ENSURE QUALITY AND AUTONOMY

Social franchising is defined by eight key criteria: the granting of a license, adoption of models and tools developed by the franchisor, payment of a membership fee, oversight and support from the franchisor, primacy of the social mission, franchisees' operational autonomy, collaboration among the actors involved, and engagement of multiple stakeholders.

These models require a balance between franchisor oversight and franchisees' local autonomy to ensure quality and adaptation to local contexts. They also call for ongoing support through training, technical assistance and management tools.



GIULIANA BALDASSARRE
SDA Bocconi Lecturer of Government, Health and Not for Profit

SOCIAL IMPACT OVER PROFIT

Social franchising, unlike commercial franchising, favors social impact over profit, and is based on collaboration and sharing as the keys to success. The primary goal is to expand reach and increase impact.

PROSPECTS FOR EXPANSION AND SUSTAINABILITY

In certain cases where the model has been adopted, evidence demonstrates how an innovative social impact project can evolve into a structured social franchising model capable of combining social impact, methodological quality and large-scale reach. However, to date, this is not widely prevalent in the social sphere, with the exception of the healthcare sector — where it is more common — particularly in an international context. Adopting a sustainable and differentiated model for accessing services — facilitated by social franchising — can help preserve both their accessibility and their social mission. This can simultaneously secure the resources needed to support training, coordination, and network development, ultimately ensuring the sustainability of the project itself.

When Inclusion Takes Off

Scaling a social impact project while staying true to its core values — this is what Luigi De Micco, Bocconi alumnus and President of PlayMore!, is doing with RunChallenge. In this interview, he tells us more about the initiative that aims to reach 100 Italian cities over the next three years

byCamillo Papini

When you know the recipe of a particular dish, and know how to cook it well, it comes naturally to want to speak about your culinary experience — whether at the office or at home with friends. However, in the end, the recipe always ends up being written down on paper, which then gets passed around. Today, perhaps, the equivalent would be a tutorial video. Social franchising is similar, and is — at least for me — all about sharing a nonprofit project through the commercial franchising model, even with people on the other side of the world. The primary and fundamental difference between the two is that the initiative's social spirit and mission remain the top priorities." This is how **Luigi De Micco** interprets the modern concept of social franchising. De Micco graduated from Bocconi in Economics and Business with a major in SME Management, and is co-founder — alongside Pietro Palvarini — and currently President of PlayMore!, a nonprofit organization established in 2010. The organization's RunChallenge champions sports as a tool for social inclusion regardless of gender, age or ability. The initiative comprises training sessions and participation in races and walks, including "rolling" pairs for those who want to join and need volunteers to push their wheelchair. Today, RunChallenge brings together about 1,000 direct participants spread across 14 cities, including some abroad.

IN SOCIAL FRANCHISING, THE INITIATIVE'S SOCIAL SPIRIT AND MISSION REMAIN THE TOP PRIORITIES



LUIGI DE MICCO
President of PlayMore!, Bocconi Alumnus

Turnkey business models and the sharing of experiences, as well as scalability and cost containment, are all advantages of social franchising. What should one be mindful of, however, to ensure it is implemented correctly?
The most significant risk is not a risk in the true sense of the word; rather, it requires maintaining a constant focus on the complexity of a social impact project and commitment to upholding the initiative's core principles. Here are two specific, but basic examples. RunChallenge is not just a sports club for running enthusiasts; it is something much broader. So, if the project expands into new cities, it must ensure an appropriate staff-to-participant ratio in order for

MY CONTRIBUTION WILL BE TO BRING THE NUMBER OF RUNCHALLENGE POINTS IN ITALY TO 100 OVER THE NEXT THREE YEARS

every coach or educator to support everyone's athletic involvement. It must also, and above all, make the time to ask participants, "How are you? What did you do over the weekend?"

Project leaders must also check the implementation of the project...
Rather than "check," I would say "monitor." An example is to track attendance trends and making sure that groups are diverse. In our case, we would monitor that groups are composed neither entirely of people with disabilities nor entirely of people without disabilities. Other important factors must be considered as well, including financial sustainability and insurance coverage among members. However, before addressing any of that, it is best to identify the project's key roles. For RunChallenge, these are the local project coordinator, the sports coaches and the educators. Regarding the latter, it is worth noting that people with disabilities are, on average, the most frequent participants.

What type of organization is social franchising best suited for?
Off the top of my head, I would say it is suitable for anyone; the concept of motivation comes to mind here. We have groups that are still active today, created by just one individual — as was the case in Naples — as well as initiatives supported by major organizations that have since come to an end. Having said that, continuous and two-way dialogue is important because there is always an opportunity to refine the project's implementation as we move forward. In Cagliari, all it took was thinking about which training location would be best to increase enrollment.

Is sustainability hard to achieve?
Solid organizational and budget management skills are necessary, besides the fact that social franchising often entails a fee paid by the franchisee, though not always — as is the case with RunChallenge. We also offer training courses on fundraising since individual donations are some of our main revenue sources, and they are crucial since the program is free. The only exception is an annual fee of €20 for insurance and the purchase of a red t-shirt, the project's symbol. At the same time, the organization participates in public tenders and also collaborates with corporations.

What might the future of social franchising look like?
First and foremost, it needs to expand significantly since it is not so common throughout Europe. But then again, it did not even have a name until recently. My contribution is to increase the number of RunChallenge activation points in Italy to 100 over the next three years.





The Future in Search of Investors

AI, biotech and infrastructure require resources that public budgets cannot provide on their own. Europe must create financial instruments that are capable of channeling household savings into firms, with clear risk and return profiles

by Stefano Caselli

The future does not fund itself. It requires investment and "patient capital" to transform innovation into growth, generating additional GDP and employment. These are the essential conditions for sustaining the welfare state, addressing the needs of an aging population and reducing the burden of debt — in short, for building a future that is better than the present. For Italy and Europe, this challenge becomes surmountable if we can link savings to growth and development projects without having to shift the cost onto future generations. Artificial intelligence, biotechnology,

energy, defense and infrastructure are reshaping competitiveness. These areas demand substantial, high-risk investments whose returns will only materialize over time. Who will finance them? Public budgets cannot shoulder the burden alone; the cost of debt and the scarcity of resources necessitate the setting of priorities. Government spending must focus on research, infrastructure networks and security. In addition to this, we must mobilize private capital, on a larger scale and with much longer time horizons.



STEFANO CASELLI
Algebris Chair in Long-Term Investment and Absolute Return, Dean of SDA Bocconi School of Management

HOUSEHOLD SAVINGS: A RESOURCE FOR GROWTH

The capital exists. In Italy, the financial wealth of households exceeds €6.4 trillion. Behind these assets are families saving for their homes, their retirement and their children; workers and pensioners who entrust a portion of their future to financial intermediaries. Savings are not a money pool at the disposal of economic policymakers; they will only be deployed if there are accessible financial instruments, stable regulations, diversification and returns that are commensurate with risks. Conditions must be created that enable savings to contribute to growth, while safeguarding individual saving decisions. Otherwise, small investors will look elsewhere, outside of Europe, or leave their funds in their bank accounts, only to see them eroded by inflation.

PRIVATE EQUITY AND VENTURE CAPITAL TO FINANCE INNOVATION

In Europe, however, channeling household wealth into innovative businesses is difficult. Banks remain crucial, in a European context which has long given them a central role, especially for smaller firms; yet, banking credit is not sufficient at every stage of growth. A young company with uncertain revenues and intangible investments requires risk capital; the same applies to firms looking to expand internationally, acquire competitors or invest in technology. A solid capital structure is better equipped to absorb risk and support long-term plans. This is where private equity and venture capital, which are complementary tools, come into play. Venture capital funds young, innovative enterprises, embracing high levels of uncertainty and participating in their scaling. Private equity invests in established companies, supporting their growth, transformation or consolidation. What is needed are substantial and less fragmented investment funds, long-term investors and markets that offer credible paths for growth and exit. We need an EU stock exchange to provide visible and permanent liquidity.

INTEGRATED MARKETS AND TAX INCENTIVES: THE EUROPEAN CHALLENGE

While Europe possesses abundant savings, capital for growth remains fragmented. Pension funds are small compared to their non-EU counterparts; markets are still constrained by national boundaries and regulations; and households lack simplified and diversified investment channels. Companies that seek to scale up face greater obstacles than their American or Chinese counterparts. A portion of this wealth remains unutilized or ends up financing growth elsewhere. For Europe, this gap between savings and firms is a matter of both achieving autonomy and retaining global influence. The Savings and Investment Union proposed by the EU addresses a key challenge: integrating

SAVINGS ARE NOT A MONEY POOL AT THE DISPOSAL OF ECONOMIC POLICYMAKERS; THEY WILL ONLY BE DEPLOYED IF THERE ARE ACCESSIBLE FINANCIAL INSTRUMENTS, STABLE REGULATIONS, DIVERSIFICATION AND RETURNS THAT ARE COMMENSURATE WITH RISKS

capital markets, expanding opportunities for household savings and facilitating access to financial markets for companies. Households need simple, long-term investment accounts, characterized by clear tax treatment and European-wide diversification. France and Sweden have both already introduced effective instruments, with the PEA (Plan d'Épargne en Actions) and the ISK (Investeringssparkonto), which are government-backed investment accounts with a favorable fiscal treatment to channel savings into startups and innovation. Companies require structural, permanent incentives for capitalization, listing and innovation; pension funds and insurance companies need the right conditions to make long-term investments and accurately assess risk. However, this demands that every European nation finds the political courage to undertake a structural redesign of its tax system to favor risk capital and long-term investment.

CAPITAL IS NOT MERELY WHAT WE POSSESS: IT'S WHAT WE ARE CAPABLE OF SETTING INTO MOTION WITH OUR OWN WEALTH. FINANCING A DYNAMIC FUTURE IS THE INESCAPABLE AND ATTAINABLE CHALLENGE OF THE PRESENT

THE ROLE OF GOVERNMENT RESOURCES IN STRATEGIC INVESTMENT

EU public action can also help create the right conditions to share risk in a transparent manner. The Commission's proposal for a European Competitiveness Fund in the new EU budget aims to concentrate common resources on strategic sectors, and use financial instruments and public guarantees to mobilize private investment. The governmental lever can make financially viable projects that are either high-risk or carry wide-ranging benefits; its effectiveness depends on the quality of project selection, the generation of additional investment and the clear allocation of risk. It must help strengthen a European market capable of supporting companies as they scale to a global size. Households require suitable opportunities, while companies bear the responsibility of demonstrating that the capital they raise creates value. Savings must be channeled into sound and well-governed projects that offer acceptable risk-return tradeoffs and generate widespread benefits — this is how private confidence is transformed into productive force.

A PERMANENT BRIDGE BETWEEN WEALTH AND GROWTH

Italy and the European Union face a choice: either keep savings detached from the economy which is driving job creation and innovation, or build a permanent bridge between household wealth and corporate growth. It is upon this choice that hinges the sustainability of the welfare state, the management of high government debt and an aging population, and the ability to remain key players in sectors vital to future prosperity. Capital is not merely what we possess: it's what we are capable of setting into motion with our own wealth. Financing a dynamic future is the inescapable and attainable challenge of the present.



THE BOOK. *Italy is facing a decisive choice: to continue being a "numerator-focused" country, concentrating on the debt component in the debt-to-GDP ratio, or to finally become a "denominator-focused" country, aiming to grow GDP through bold investments and a long-term vision. In* Il futuro non aspetta *(Egea, 2025, p.p. 160, €16,90, in Italian) Stefano Caselli addresses this challenge with rational optimism, outlining a path that involves risk capital, scaling up businesses, and unlocking the value of our extraordinary pool of savings.*

Defense Enters the Portfolio

Energy and security are reshaping the priorities of private investors in infrastructure. Alongside ESG goals, a new focus is emerging on projects with dual-use applications, in both civilian energy and military security

by Stefano Gatti

The geopolitics of recent years has disrupted the global order established after World War II. The result is increased market volatility and uncertainty regarding investment decisions. Geopolitics has had another impact on private investment: prior to the invasion of Ukraine, there was a significant focus on ESG (Environmental, Social and Governance) internationally, certainly in Europe, but also in the United States. During that time, private investment in infrastructure — a sector which accounts for over 80% of greenhouse gas emissions — had begun to play a key role.



STEFANO GATTI
Antin IP Associate Professor of Infrastructure Finance, Bocconi University

THE AMERICAN RETREAT FROM ESG

The situation has shifted since the start of Donald Trump's second term. US investors have scaled back their commitments to ESG-related initiatives, often dismissively labeled by the Trump administration as "woke capitalism." Major global banks and international asset managers have withdrawn from alliances dedicated to promoting environmental and social causes, as well as fostering diversity. This retreat from ESG is not merely the result of political choices; it also stems from discontent coming from civil society. Growing polarization in income distribution and the increasing burden of the cost of living have fueled hostility toward issues such as environmental protection and the quality of life of workers and communities.

RATHER THAN FOCUSING SOLELY ON ESG, INVESTORS ARE INCREASINGLY DISCUSSING A NEW PARADIGM: ESD, i.e. ENERGY, SECURITY AND DEFENSE

ESG INVESTMENT PERSISTS

Despite the new landscape, however, ESG considerations have not vanished. On the contrary, they remain highly relevant for long-term investors, particularly those investing in infrastructure. Preqin, the UK financial data company, estimates that private capital raised by sustainability-oriented funds equaled $167 billion in 2025, 13% of the total. Of this amount, 65% is represented by funds investing in infrastructure, with nearly 60% of capital raised in Europe.

THE NEW ESD PARADIGM

However, there is a new development. Rather than focusing solely on ESG, investors are increasingly discussing a new paradigm: ESD, i.e. Energy, Security and Defense. These have become the new priorities for resource allocation, and this paradigm opens up entirely new scenarios.
First, it is worth noting that ESD is not necessarily incompatible with ESG. For instance, the pursuit of energy autonomy and security in Europe can be bolstered by increasing renewable

energy capacity and reducing reliance on fossil fuels, both of which align with ESG-oriented investment.
Second, and fundamentally, the truly novel element is the addition of the "S" (Security) and "D" (Defense) components. Let us focus specifically on the "D" dimension.

DUAL-USE INFRASTRUCTURE AND DEFENSE
Among the nine key areas outlined in the "Defence Readiness Roadmap 2030," the European Union identifies among other things mobility infrastructure, logistics corridors, airports, ports, digital infrastructure, drones and cybersecurity. These all represent so-called dual-use investments — serving both civilian and military purposes — and thus constitute areas for private capital investment that remain consistent with ESG objectives.
It is estimated that strengthening European defense will require an investment of approximately €9 trillion over the next 10 years. Of this total, roughly €5 trillion is earmarked for "adjacent infrastructure." Public finances are clearly insufficient on their own to shoulder the burden of such huge outlays, making private capital critical to the equation. And national governments and EU policymakers are increasingly framing defense as an investment area that is compatible with ESG criteria, so that many investors are adjusting their asset allocation strategies accordingly.

ESD AS AN EXTENSION OF ESG
ESD, therefore, represents an extension of the ESG concept and its underlying principles, but now crucially incorporating the dimension of defense, which is in itself a further sign of the difficult times we are living through.

Sovereign Wealth Funds: Can Europe Trust Them?

They possess vast resources and have long-term horizons, yet ownership by foreign government causes distrust. Predictable rules and co-investment strategies could help attract them to strategic sectors without having to sacrifice control

by Bernardo Bortolotti

Who will provide financing for the coming decade? The EU budget proposal for 2028–2034 tasks the new European Competitiveness Fund with mobilizing private capital through government guarantees and financial instruments. While this approach is sound, the rigid distinction between public and private capital does not easily apply to sovereign wealth funds, institutional investors that are state-owned, yet managed primarily with a focus on financial returns. Over the last few decades, sovereign funds have accumulated assets exceeding $15 trillion.



BERNARDO BORTOLOTTI
Director of the Sovereign Investment Lab, Baffi Research Center, Bocconi University

THE CAPITAL THAT EUROPE SEEKS, AND FEARS
Their dual nature makes them

unique on the global financial landscape: they combine the patience of public capital with the financial discipline of private capital, and they benefit from long-term investment horizons, typically without the pressure of short-term liabilities. In short, they offer exactly what Europe needs. Yet, this same dual nature creates a paradox: Europe desires this capital, but remains wary of the state ownership that comes with it. Barriers to foreign investment have risen and expanded; the discourse of "economic security" has replaced that of "open capital flows." And the very sectors where caution is greatest are also those with the most urgent need for investment.

THE VERY DUAL NATURE OF SOVEREIGN WEALTH FUNDS CREATES A PARADOX: EUROPE WANTS THIS CAPITAL, BUT REMAINS WARY OF THE STATE OWNERSHIP THAT COMES WITH IT

TRUST IS A TWO-WAY STREET

This paradox has a second, often overlooked, dimension: sovereign wealth funds, too, are now thinking in terms of geopolitical security. The International Forum of Sovereign Wealth Funds (IFSWF) has — for the first time — calculated an index of the geographic concentration of their direct investments, which rose from 0.110 in 2021 to 0.192 in 2025. The United States is driving this trend, with its share of the value of tracked investments climbing from 28% to over 41%. Europe has seen only modest growth, accounting for 30% of the total number of deals in 2025, up from 27% in 2019. These funds are not withdrawing from the global stage; rather, they are redrawing the investment map, focusing on a select few markets deemed reliable — places that offer both strong return prospects and institutional stability.
Trust, much like the tango, takes two. Europe wonders whether it can trust Abu Dhabi, Riyadh or Singapore; meanwhile, Abu Dhabi, Riyadh and Singapore wonder whether Europe is a market they can rely on. Unpredictable screening mechanisms that are subject to political discretion fail to address either concern: they provide no reassurance to those wary of foreign control, while simultaneously deterring those who seek stable, consistent rules. Ultimately, capital flows toward destinations where security and returns align. Today, despite the Trump factor, that destination is America.

THE SPANISH MODEL OF CO-INVESTMENT

The paradox cannot be resolved by simply choosing between openness and closure; instead, it requires the design of appropriate rules and incentives. Spain offers an instructive example. FOCO, a €2 billion co-investment fund financed through NextGenerationEU, requires every euro of public capital be matched by at least one euro of foreign co-investment. It invests in strategic sectors, takes minority stakes and operates on a pari passu basis, with no preferential treatment or loss protection for the public capital involved. By the end of 2025, it had formalized 15 transactions, committing €1.2 billion. Last year, sovereign investors allocated $4.5 billion to Spain, more than triple the amount seen in 2024. In this way, the public co-investor serves a dual purpose: it oversees governance while signaling to the foreign partner that the country is actively seeking to attract international capital.

A LESSON FOR THE COMPETITIVENESS FUND

This is a lesson that the European Competitiveness Fund could apply on an EU scale. It means treating sovereign wealth funds for what they are: neither mere private investors nor simply extensions of foreign governments to be kept at arm's length. What is required are clear rules regarding control rights and access to sensitive information, along with public investment vehicles that are capable of partnering with them, thus offering mutual assurances. In this framework, investment screening can evolve from being a mere barrier into a certification of reliability. In a world where sovereign capital gravitates toward a select few trusted markets, the EU must do more than just decide how open it wishes to be: it must demonstrate it is one of those trusted markets.

Finance for Scaling Up

Transforming a startup into a global enterprise requires different types of funding at various stages of growth, as well as reliable markets. Public guarantees are effective only if they generate additional investment, not if they shift the risks of weak projects onto taxpayers

by Stefano Rossi

A good idea can emerge with few resources. Turning that idea into a business capable of competing on the global stage is an entirely different matter. In sectors like AI, biotech, and energy, investments must be made today for returns that may — or may not —materialize years down the line. The question, "Who will fund the next decade?" becomes a very practical one. Who is equipped to bear such degree of uncertainty, and under what terms?



STEFANO ROSSI
Full Professor of Finance, Bocconi University

FROM VENTURE CAPITAL TO CREDIT: FINANCING GROWTH

The answer changes as the company evolves. In the early stages, when the product is still being defined, venture capital is essential: equity investors share in the losses, but also participate in the profits should the venture succeed. Relying solely on debt during this phase is problematic, as it imposes fixed repayment deadlines on highly uncertain revenue streams. Later on, once a customer base is established and cash flows become more predictable, bank credit and corporate bonds can fuel further growth. Bonds also allow a broader range of investors — those having no direct connection to the company — to participate. Corporate finance is essentially the art of finding the right mix of these funding sources and adjusting that mix at the appropriate time.
In a study conducted with Alireza Aghaee and Lorenzo Bretscher, we examined how companies are financed across 52 countries. We found that in nations with stronger investor protections, banking credit and market-based debt coexist more effectively, even for mid-sized enterprises. Simply encouraging savings to fund innovation is not enough: for capital to reach a company it is not yet familiar with, it requires reliable contracts, credible information and markets that allow for easy entry and exit.

EUROPE'S LAG AND THE NEED FOR LESS FRAGMENTED MARKETS

Europe started late in the race for new technologies and continues to lose ground at the most critical stage: the scaling up of businesses. We are capable of conducting research and launching startups, but we far less frequently provide them with the opportunity to raise capital on a continental scale, so that they can grow into major enterprises while remaining here. The risks associated with AI demand serious regulation; however, establishing rules before creating the right conditions for investment and innovation effectively hands the industrial advantage to

FOR CAPITAL TO REACH A COMPANY IT IS NOT YET FAMILIAR WITH, IT REQUIRES RELIABLE CONTRACTS, CREDIBLE INFORMATION AND MARKETS THAT ALLOW FOR EASY ENTRY AND EXIT

others, as well as the ability to orient standards. We need less fragmented markets, along with credible pathways for initial public offerings (IPOs) and acquisitions.

EUROPEAN FUNDS AND GUARANTEES: THE RISK MUST NOT FALL ON TAXPAYERS

The proposed EU budget for 2028–2034 and the European Competitiveness Fund aim to attract private capital through government guarantees and other financial instruments. While the concept is sound, leverage is not equivalent in effect. A guarantee is only meaningful if it addresses a specific obstacle, enables a solid project to offer adequate returns and secures additional investment. In the case of commercial ventures, if private investors still fail to see return prospects, relying on public funds does not make the idea any better: it merely shifts the risk onto the taxpayer. We must evaluate the amount of additional capital truly raised and determine who remains exposed to potential losses, rather than focusing solely on the announced total volume.

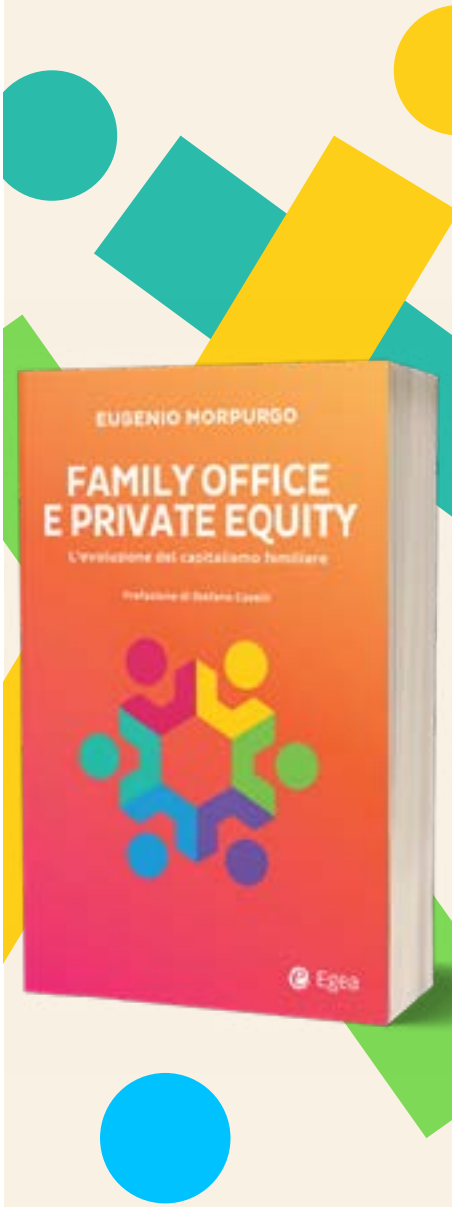
INVESTING WITH DISCERNMENT, RATHER THAN CHASING EVERY TECHNOLOGY

Arriving late does not mean it is wise to invest in everything, from AI to defense. Public resources are limited; spreading them too thin by chasing every trendy technology deprives projects with genuine growth potential of the support they need. In another recent paper of mine, co-authored with Huseyin Gulen, Mihai Ion and Candace Jens, we show how overly optimistic expectations can fuel waves of debt and investment, which subsequently suffer from a reversal. Enthusiasm is no substitute for the rigorous vetting of business plans. When benefits are collective, as in the case of basic research or security, public intervention may be justified on its own merits; such interventions should be declared and evaluated as such, rather than by inventing a private return that does not actually exist.

THE CHALLENGE FOR THE COMING DECADE: CREATING THE CONDITIONS FOR INVESTMENT

I am optimistic about Europe's capacity for recovery, provided that ambition and risk are taken seriously. We must make it possible to experiment, to grow and, when necessary, to fail; we must encourage the private sector to invest where it sees an economic future; and we must deploy public funds where they yield a demonstrable benefit. Capital can finance Europe's next decade. The task is to create the companies and the conditions that make investment worthwhile.

Family office:
capitale paziente per far crescere le imprese.



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A Single Market, Many Obstacles

Increased trade is associated with lower costs, though the extent of this effect varies depending on the product and the institutional context. Facilitating intra-EU trade requires simpler procedures and interventions addressing specific barriers

by Laura Bonacorsi

Does international trade in Europe exhibit economies of scale? In other words, do trade costs decrease as trade volume rises? A study I conducted, which examines trade flows of manufacturing goods across 28 European countries between 1980 and 2020, documents, for the first time, the existence of economies of scale in trade costs within Europe: a 10% increase in bilateral trade is associated with a 1.07% reduction in costs at an aggregate level. Furthermore, the estimated cost reduction varies by sector; for the same 10% increase in trade, the textile and auto industries show higher scale elasticity in absolute terms (1.28% and 1.31%, respectively), while wood and paper (1.01%)

WHERE INSTITUTIONAL FRICTIONS ARE GREATER, AN INCREASE IN TRADE VOLUME IS ASSOCIATED WITH A LARGER PERCENTAGE REDUCTION IN TRADE COSTS

and minerals (0.94%) exhibit lower scale elasticity.

HOW ECONOMIES OF SCALE IN TRADE ARE MEASURED

The analysis employs gravity-type equations, which are widely used in empirical studies of international trade and in the evaluation of trade policies. These micro-founded equations, which are derived from various theoretical models of international trade (Anderson and van Wincoop, 2003; Eaton and Kortum, 2002; Arkolakis et al., 2012), link bilateral trade flows between regions to their respective economic size and the frictions that separate them. Geographic distance is used as a proxy for trade frictions, which may encompass the search for trading partners, regulatory requirements and other institutional obstacles. Adapting the methodology developed by Anderson, Vesselovsky and Yotov (2016), this study compares the role of distance in domestic trade and cross-border trade to determine whether trade costs vary according to trade volume.

WHY BENEFITS DIFFER ACROSS INDUSTRIES

To understand the sectoral differences in estimated scale elasticities, the main findings were compared against a sector-level "tradability" indicator developed by Holmes and Stevens (2014). There is a strong correlation between tradability and estimated scale elasticity: the lower the tradability, the lower the scale elasticity (in absolute terms). This implies that for goods that are inherently more difficult to trade, trade volumes play a smaller role in reducing trade costs. Since the tradability measure was derived using US production data, its correlation with the estimated scale elasticities suggests that the structural tradability of goods plays a role in explaining the observed intersectoral differences. This interpretation is further supported by the fact that economies of scale remain relatively constant over time across the various sectors examined.



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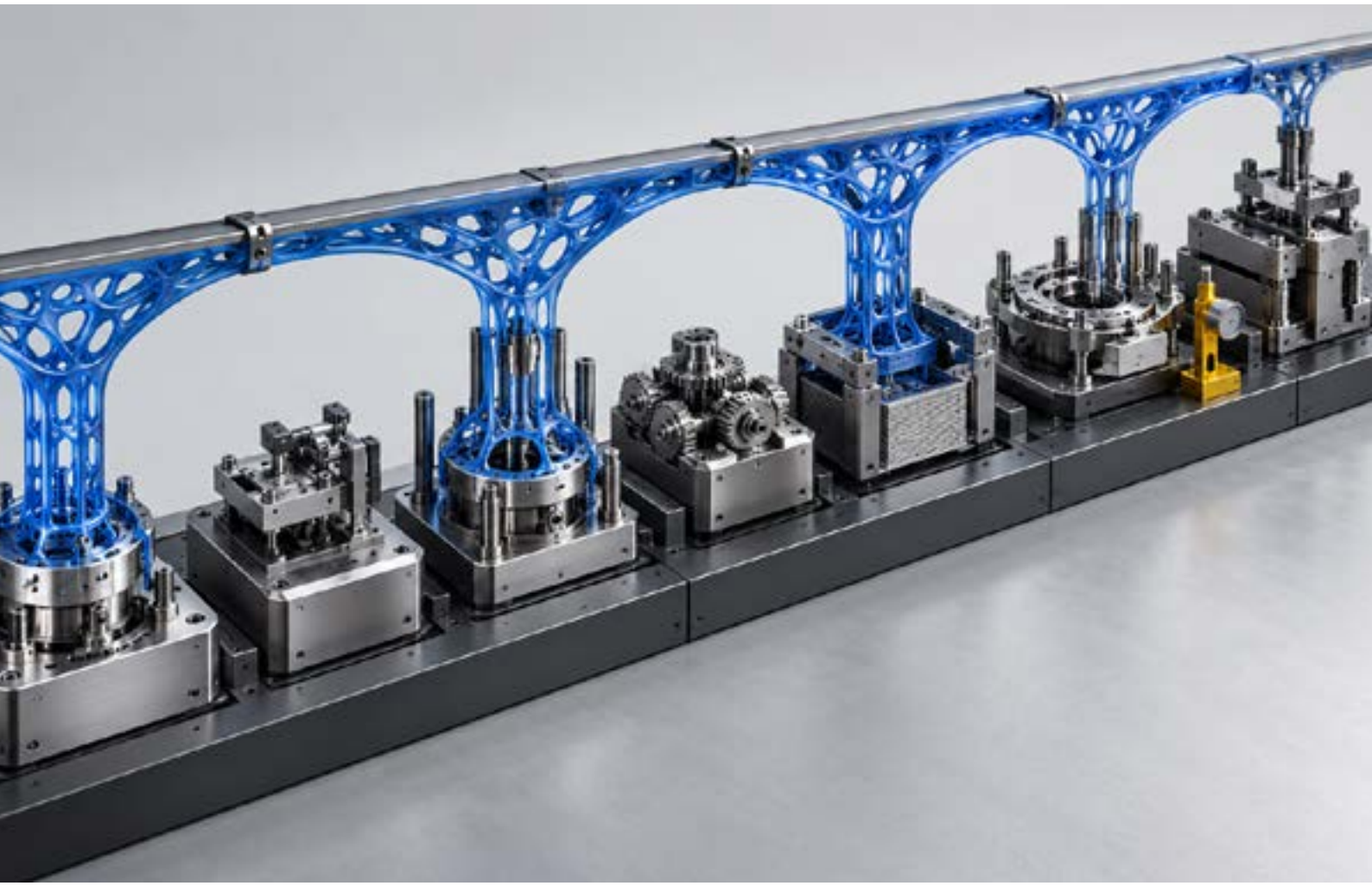
THE PAPER.
Scale Economies in European Trade, *by Laura Bonacorsi*

THE SINGLE MARKET, EU ENLARGEMENT AND THE ROLE OF INSTITUTIONS

The existence of economies of scale in international trade may indicate that the fixed component of trade costs is significant. It is therefore worth asking whether this has been affected in any way by the creation of the Single Market and the expansion of the European Union. Estimates show a variation — albeit a modest one — in the elasticities associated with the enlargement of the European Union, consistent with an overall reduction in the fixed costs of trade. The institutional context also plays a role: exporting to the country with highest corruption in the sample yields a benefit that is 80% greater than the one obtained by exporting to the least corrupt country (approximately a 1.15% reduction in costs, as opposed to 0.64%, for a 10% increase in volume). Therefore, where institutional frictions are greater, an increase in trade volume is associated with a larger percentage reduction in trade costs.

MORE EFFICIENT TRADE THROUGH SIMPLE PROCEDURES AND RELIABLE INSTITUTIONS

Overall, the results suggest that trading more with the same partner is associated with a reduction in trade costs, though the magnitude of this benefit varies depending on the goods involved and the institutional context. Facilitating trade may, therefore, require simpler procedures and reliable institutions, especially in countries where trade frictions are most significant. Furthermore, the differences observed across sectors suggest that interventions should be tailored to the specific goods being traded and the barriers that make trading them more costly.



Choosing AI in the Factory

Italian manufacturing firms are focusing on machine learning applications that reduce downtime and improve productivity. Where data is scarce and employee knowledge is hard to codify, AI adoption proceeds more slowly

by Alberto Grando

The gap between Italian SMEs and large enterprises in terms of digitalization, as measured by the Digital Intensity Index, remains significant, though it narrowed slightly in 2025 compared to the previous two-year period. Conversely, the gap in AI adoption rates is widening, highlighting a disparity that puts many of the firms of Italy's manufacturing system at a disadvantage. Although Italian small and medium firms saw their usage rate double over the two-year period — rising from 7.7% to 15.7% — companies with more than 250 employees are showing much higher adoption rates, reaching 53.1% (ISTAT data, 2025).

THE RESOURCE GAP

The primary constraints hindering the adoption of new technologies in Italian firms stem from a lack of resources: financial capital, specific skills and the unavailability or poor quality of data. This is particularly true for SMEs, which, beyond their structural undercapitalization, struggle to attract and retain personnel trained in AI, and to

invest in structured data collection systems. In many small Italian firms, information is often not codified, remaining instead embodied in the operational routines of personnel. Given the context of scarce resources, decisions regarding the use of new technologies are guided by principles of focus and selectivity, intentionally setting aside less promising areas or those burdened by resource constraints. This is what emerges from a study conducted on a dataset of Italian manufacturing SMEs, which aimed to identify the shop-floor operation activities where AI adoption efforts are prioritized, as well as those areas of AI investment that have been neglected or met with skepticism, and the reasons why (Chiarini et al., 2026). The study provides a clear picture of the priorities and constraints identified by the companies being sampled.

SMEs HAVE DOUBLED THEIR USE OF AI, YET THE GAP WITH LARGE COMPANIES KEEPS WIDENING



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WHERE AI IS WORTH THE INVESTMENT

Regarding priorities, the focus is on AI applications capable of mitigating the effects of recent disruptions, such as rising costs for raw materials and energy, increasingly unpredictable price fluctuations, and shortages that complicate logistics, or applications designed to minimize non-productive time, prevent machine downtime, rapidly simulate and optimize production flows to eliminate bottlenecks, and achieve maximum plant utilization, thereby maximizing both productivity and quality compliance. Conversely, other applications generate less interest, either because the performance gain offered by AI over existing systems does not seem to justify the investment, or because of the inherent difficulty in codifying and replacing the tacit knowledge held by operations personnel. Furthermore, AI adoption is hindered by several factors identified by the study's participants: lack of data, or data of poor quality and accuracy, that are required for implementation; difficulties in attracting the right talent or upskilling the existing workforce; resistance to change, skepticism and reluctance around the impact of the new technology; challenges in integrating AI with legacy systems; and budgetary constraints.

THE PAPER. Investigating the state-of-the-art and challenges of artificial intelligence for production management in Italian manufacturing SMEs, *by Andrea Chiarini, Alberto Grando and Surajit Bag*

A STRATEGY OF SELECTIVE ADOPTION

Our SMEs therefore have to make selective choices, aligning their AI investment priorities with their strategic objectives. They favor areas where results are immediately measurable and supported by a sufficient level of data-readiness, although this is often confined to specific operational domain. While in other operational areas, the tacit knowledge and expertise of their employees remain assets that are difficult to replace in the short term.



THE BOOK. *Drawing on decades of experience in business transformation, Marc Herlant offers a practical framework to move beyond isolated pilot projects and leverage AI to build faster, flatter, and more adaptive organizations. He explores AI's impact on human resources, organizational design, and leadership, proving that automation only creates superior value when guided by human judgment. Combining actionable frameworks, strategic trade-off's and international cases,* The Super Enterprise *provides leaders with a roadmap to redefine the enterprise. (BUP, 2026, 148 p.p., €21,50).*



A Prison Sentence Does Not Erase Personal Ties

The Constitutional Court has recognized the right of incarcerated individuals to maintain intimate relationships. To give effect to this right through private meetings with partners, Italy can look to the examples of Spain, France and Canada, countries that provide established timeframes, suitable spaces and security safeguards for intimate relationships in prison

by Simone Lonati

The Italian Constitutional Court has irrevocably ruled that entering prison does not mean forfeiting the right to intimate relationships, including their sexual dimension. In its decision no. 10 of 2024, the Court struck down the absolute prohibition, previously enforced through mandatory visual supervision, on totally private meetings between inmates and their partners. The underlying rationale represents a significant civilizational milestone: it affirms that the restriction of personal liberty cannot erase an essential component of human dignity. It is now the duty of institutions to implement this long-denied right as soon as possible.

FROM THE CONSTITUTIONAL COURT'S RULING TO THE REGULATIONS FOR SAFEGUARDING THIS RIGHT

The Constitutional Court's decision outlines specific conditions and safeguards: meetings must be private, of an appropriate duration, regular rather than sporadic, held in suitable environments and subject to a concrete assessment

of security requirements. Legislative action is required to ensure the consistent exercise of this recognized right, a right whose protection cannot remain in limbo while awaiting new regulations. A comprehensive regulatory framework is urgently needed to define eligibility, the application process, the timeframe for receiving a reply and the procedures for challenging denials or delays.

THE SPANISH MODEL: REGULAR INTIMATE MEETINGS AND DEDICATED SPACES

In developing such rules, the experiences of other countries offer useful guidance. In Spain, prison regulations allow for at least one intimate meeting per month, lasting between one and three hours, upon request, provided there are no concerns regarding public order or security. Appropriate facilities are provided for those who do not qualify for standard leave permits. For Italy, a clear indication can be derived from this: establishing a minimum frequency for such visits and ensuring that the continuity of a prisoner's relationship does not depend on the discretionary choices of the individual institution. Furthermore, the distinct Spanish provision for family visits and meetings with partners and children serves as a reminder that romantic relationships and parenthood require specific spaces and arrangements.

FRANCE AND CANADA: PRIVACY, DIGNITY AND SECURITY

France demonstrates the importance of the quality of the environment provided to inmates and their intimates. Its unités de vie familiale (family living units) are furnished apartments located inside the prison perimeter but separate from standard detention areas. In these spaces, inmates can host loved ones for periods ranging from six to 72

THE RESTRICTION OF PERSONAL LIBERTY CANNOT ERASE AN ESSENTIAL COMPONENT OF HUMAN DIGNITY

hours, free from direct visual or auditory surveillance. Preparing a meal, talking and sharing time together all restore substance to a relationship. Italian policy should aim to establish such domestic-style environments, while in the interim providing adapted spaces that ensure genuine privacy.
The time required to construct these facilities cannot and must not become the indefinite postponement of the right to intimacy.
The Canadian federal penitentiary system offers insight into the relationship between intimacy and security. Private visits — typically lasting up to 72 hours every two months — are preceded by a risk assessment that accounts for factors such as domestic violence and information on visitors. Prison staff maintain contact in the least intrusive manner possible. The lesson here is that protecting privacy also entails safeguarding the freedom and safety of visiting partners; therefore, regulations must embody requirements for continuous consent, concrete verification and the ability to seek assistance.



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THE PAPER. Il diritto all'affettività in carcere tra riconoscimento costituzionale ed effettività: una sfida ancora aperta, *by Simone Lonati*

THE PATH FOR ITALY: UNIFORM RULES AND THE RESOURCES TO IMPLEMENT THEM

While these models cannot be imported wholesale, they help identify viable options. In Italy, a legal foundation already exists: the 2017 proposal by the Giostra Committee, which suggested provisions for visits lasting at least three hours, providing confidentiality and the possibility of maintaining ongoing personal relationships. Revisiting this proposal in light of the recent ruling would mean establishing minimum visit frequencies, clear timeframes, specific justifications for any denial and effective remedies against administrative inaction. Furthermore, financial resources and transitional measures are required; organizational shortcomings should not, in practice, determine which individuals are able to exercise what is a fundamental right.
As early as 1974, Vittorio Grevi identified human dignity as the guiding principle for all aspects of prison life. Implementing this ruling means translating that principle into actual responsibilities. It is the penitentiary system that must adapt to the law; the effective exercise of a fundamental right cannot depend on the specific prison in which one is held.

[COVER STORY]



Citizenship Is Not a Password

The EU digital wallet could unlock access to services and opportunities. Its constitutional quality will depend on the limits placed on data collection and the safeguards provided for those who choose not to use it or are unable to authenticate themselves

by Oreste Pollicino

Who are you? This age-old question has returned to the heart of digital innovation. A voice can be replicated, a face reconstructed, a conversation simulated. Recognizing another person — a prerequisite for any legal or economic relationship — has thus become a matter of how power is organized. Who decides what evidence is sufficient to identify us? And what options remain for those who, whether by mistake or by choice, find themselves outside the system? By the end of 2026, European Union Member States must make at least one EU digital identity wallet available. EU Regulation 2024/1183, which amends the eIDAS framework, paves the way for a system that will allow citizens to prove their identity, present documents and verify their credentials in a digital format, including for the purpose of accessing services in other EU countries.



ORESTE POLLICINO
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CITIZENSHIP IN THE AGE OF DIGITAL IDENTITY

What is at stake goes beyond mere administrative simplification. When identification becomes the gateway to essential services and opportunities, the rules governing it help define the practical conditions of citizenship. This is where a constitutional perspective intersects with digital infrastructure. A system can be secure while still being exclusionary; it can be efficient while collecting excessive amounts of data; and it can be formally optional while becoming, in practice, indispensable. The freedom to choose loses substance if any alternative entails unsustainable wait times, higher costs or inferior services. The EU regulation stipulates that the use of digital wallets is voluntary and protects those who choose not to use it from restrictions or disadvantages when accessing services. Its implementation must ensure that this choice remains a genuine option, also for individuals with fewer technical skills, limited resources or those who simply prefer a different channel.

FREEDOM OF CHOICE IS HOLLOWED OUT IF ALTERNATIVES MEAN EXCESSIVE WAITING TIME, HIGH COST OR BAD SERVICE

PRIVACY AND PROPORTIONALITY: THE RIGHT TO SHARE ONLY WHAT IS NECESSARY

There is a crucial distinction to be made: proving that a person meets a specific requirement should not entail disclosing their entire identity. To verify that someone has reached the legal age, for instance, it is sufficient to confirm that a certain threshold has been met; providing one's full name, address or date of birth may be entirely unnecessary. The concept of selective data disclosure — a core feature of the EU framework — gives technical form to a constitutional imperative: limiting the extent to which public or private entities can learn about us in relation to the purpose at hand. In this way, the principle of proportionality is embedded into the very design of the service, before it gets evaluated by a court.

PROTECTING IDENTITY MEANS SAFEGUARDING FREEDOM

From this perspective, the ability to link every single operation to the same individual is an outcome that must be avoided. Our personal identities unfold across various spheres: work, healthcare, political engagement and consumption. Keeping these domains separate allows us to exercise freedoms that might otherwise be constrained if all our activities were aggregated. A reliable infrastructure must facilitate the necessary level of identification without enabling a permanent, comprehensive digital reconstruction of our lives. Furthermore, the

option to use pseudonyms in cases where the law does not mandate formal identification must be preserved: it protects spaces for personal expression, dissent and individual experimentation.

ARTIFICIAL INTELLIGENCE, IDENTITY AND ACCOUNTABILITY

Artificial intelligence makes this need even more urgent, while also demanding caution regarding what such systems promise. Verifying the identity of a person communicating does not certify the truthfulness of what they are saying. An identified individual can still spread falsehoods, and authentic content can be used to deceive. And when an artificial agent operates, knowing on whose behalf it acts leaves open the crucial question of the powers granted to it and the limits of its mandate. Trust requires that identity, authorization and accountability remain distinct.

THE EUROPEAN CHALLENGE: ENSURING RIGHTS EVEN FOR THOSE WHO ARE EXCLUDED

Europe therefore faces a choice regarding how it conceives of the market and the individual. A well-designed digital identity can reduce fraud, facilitate transactions and make rights more accessible. To achieve this, it must provide for understandable remedies when things go wrong, as well as clear lines of accountability and genuine possibilities to correct errors. Those who are unable to authenticate themselves must still retain their rights. The constitutional quality of this new infrastructure will be measured by the extent to which it is capable of recognizing those rights, even in instances of digital opt-outs.

Trust Is a Design Choice

Synthetic faces and voices are making online identification increasingly fragile. For the European wallet to become a trusted infrastructure, it needs clear accountability, control over access to data and services that genuinely make people's lives easier

by Greta Nasi, Benedetta Julia Burston





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In a world where people, images, signatures, documents, payments and even interlocutors can be synthetic, how do we prove who we are?
The digital economy has solved the problem of moving data and money. It must now solve the problem of knowing whom it is actually dealing with.

WHEN FACES AND VOICES CAN NO LONGER BE TRUSTED

Recognition by appearance has stopped working: forging a face or a voice now costs almost nothing. The Arup case is a good example. In January 2024 a finance employee at the

firm's Hong Kong office joined a video call with the Chief Financial Officer and several colleagues, all of them synthetic, and made 15 transfers worth about $25 million.
The fraud surfaced only when he checked with headquarters.

THE DIGITAL ECONOMY HAS SOLVED THE PROBLEM OF MOVING DATA AND MONEY. IT MUST NOW SOLVE THE PROBLEM OF KNOWING WHOM YOU ARE ACTUALLY DEALING WITH

EUROPE'S ANSWER: VERIFIABLE DIGITAL IDENTITY

When appearance can be generated, proof has to move from how someone looks to what they can demonstrate cryptographically. This is the logic of the European digital identity framework: verifiable credentials issued by an authority and checkable by anyone, selective disclosure (you can show you are over 18 without revealing your date of birth) and qualified electronic signatures.
By the end of 2026 every Member State must make at least one EU Digital Identity Wallet available, the user-facing component of a shared trust infrastructure. Large scale pilots have already involved more than 550 companies and public authorities in 26 Member States plus Norway, Iceland and Ukraine, and by the end of 2027 banks and other regulated sectors will have to accept it for strong authentication. The question extends to software agents: when they act for us, a counterpart must be able to show on whose behalf it acts and with what mandate.

TECHNOLOGY ALONE CANNOT BUILD TRUST

Technology can be procured: a tender, a vendor, a certified wallet. The reason to rely on it cannot. Infrastructure able to prove who you are can also — if badly designed — record every place you proved it, and an identity system that people suspect of watching them will be used grudgingly or not at all. Trust has to be designed into governance, through principles that rules can require.

ACCOUNTABILITY, PRIVACY AND INTEROPERABILITY

The first is accountability of those who verify, since power over identity data stays legitimate only while it is visible.
The wallet should therefore ship with an access log the citizen can read. For example, X-Road, the data exchange layer Estonia has used since 2001, lets citizens see who has consulted their records and when, and in 2020 the data protection authority fined a police officer who had looked up his fiancée's file for private reasons. Visibility needs deterrence: sanctions for misuse must be applied in the open, because a log without consequences is decoration.
Privacy by design adds unlinkability, so that verifiers cannot match the different uses of one wallet, which would make it a tracking device. Interoperability requires recognition across borders from day one, so that 27 national systems do not harden into 27 silos; Estonia and Finland have long exchanged data between their X-Road systems.
Adoption comes last: trust is earned through use, so the infrastructure must enter through services that plainly save time.

ITALY'S IT-WALLET AND THE REAL TEST OF ADOPTION

Italy is not starting from scratch. IT-Wallet, available in the IO app and accessible via SPID or the electronic identity card, has included the driving license and health card since December 2024, surpassing 10 million activations. What remains open is whether it will be used because it saves time, or endured as one more obligation.
That answer will matter more than the 2026 deadline, which only measures whether Europe can deploy the technical layer. In a world where faces and voices can be produced on demand, being able to prove who you are, and to see who is asking, is a public good. The states that build it will hold what the synthetic age makes scarce: the ability to know with whom they are dealing.

Proof Without Disclosure

Zero-knowledge proofs make it possible to demonstrate that a requirement has been met without disclosing the underlying data or allowing separate verifications to be linked. Research is now focused on bringing this protection to smartphones while making it resistant to future quantum computers

by Emmanuela Orsini

When we enter a bar, the person at the door may check our ID to confirm that we are old enough to drink alcohol. This is the only information they need, yet the card also reveals our name, birthdate, place of birth, address and photograph. We usually agree to share these details because the document is checked quickly, handed back and typically leaves no record.
Online the situation is radically different, because whatever we show can be copied, stored, combined with other data and exposed.



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TRUSTWORTHY BUT TRACEABLE

Regulation (EU) 2024/1183, known as eIDAS 2, requires every Member State to offer its citizens a European Digital Identity Wallet by December 2026, so that they can prove who they are anywhere in the EU while keeping control of their data. The wallet will hold our documents in digital form, known as credentials, and should let us disclose only what a service needs, such as the fact that we are over 18.
Article 5a(16) goes further: our transactions must not be tracked, linked or correlated without our explicit consent, and whenever our identity is not needed, they must remain unlinkable.
The difficulty is that a service cannot simply take our word for it, and to trust what we show, it must check the digital signature with which the issuer certified the credential, a cryptographic stamp that only the issuer can produce and that anyone can verify.
But, if that signature is the same every time we use the credential, it behaves like a serial number.
A wine shop checking our age, a bank checking our address and a public office checking our identity would all see the same signature, and if just one of them knew our name, all of them could know what we had done. In other words, the very thing that makes a credential trustworthy is also what makes it traceable.

CRYPTOGRAPHY OFFERS A WAY OUT OF THIS DILEMMA: INSTEAD OF SHOWING THE SIGNATURE, THE WALLET CAN PROVE THAT THE ONE IT HOLDS IS VALID

THE PAPER. Shorter, Tighter, FAESTer: Optimizations and Improved (QROM) Analysis for VOLE-in-the-Head Signatures, *by C. Baum, W. Beullens, L. Braun, C. Delpech de Saint Guilhem, M. Klooß, C. Majenz, S. Mukherjee, E. Orsini, S. Ramacher, C. Rechberger, L. Roy, P. Scholl*

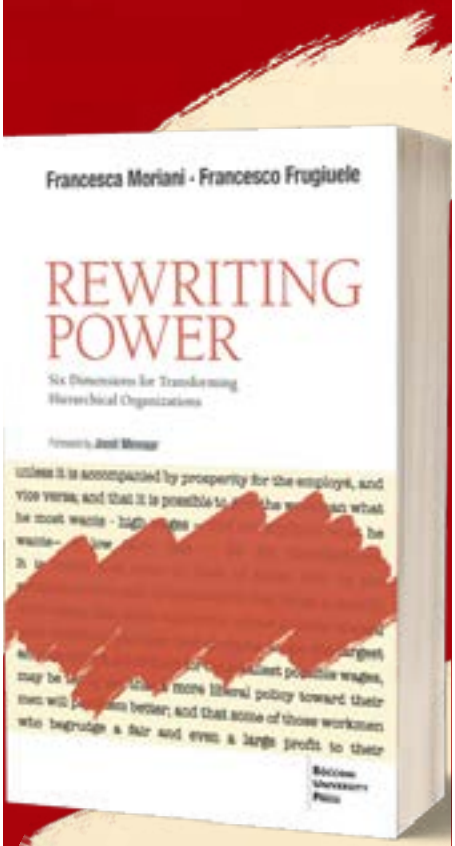
CONVINCING WITHOUT REVEALING

Cryptography offers a way out of this dilemma: instead of showing the signature, the wallet can prove that the one it holds is valid.
This is called a zero-knowledge proof, a mathematical tool formalized in the 1980s, that convinces someone that a statement is true without revealing any other information.
In the wallet, the statement would be "I hold a credential signed by the issuer, and the date of birth it contains is more than 18 years ago," and the service would learn that this is true and nothing else.
Because the digital wallet generates a fresh proof at every check, the credential itself would give services nothing to recognize us by, and even the issuer could not trace us.

THE QUANTUM THREAT

There is, however, a second problem: today's digital signatures are secure only because forging them requires solving mathematical problems that ordinary computers cannot solve in any reasonable amount of time, but that a large enough quantum computer could solve quickly.
Such machines do not exist yet, but governments are investing billions in quantum computing. The danger is forgery, as whoever could solve those problems could compute an issuer's secret signing key and produce credentials that pass every check.
Switching to quantum-resistant signatures, some of which NIST — the US standards agency — has already standardized, would solve only half the problem: it would stop forgery, but proving that we hold such a signature without revealing it is far more expensive.
Closing this gap is the aim of one of my research projects at Bocconi. It builds on my work in Fromager, a zero-knowledge project within DARPA's SIEVE program, and on FAEST, a quantum-resistant signature scheme I developed with colleagues across Europe, now among the candidates in the third round of NIST's selection.
Every FAEST signature is itself a zero-knowledge proof, and the project aims to use the same techniques to make the wallet's proofs quantum-resistant. If such proofs can be made efficient enough for smartphones and compatible with the European wallet, digital services may one day ask a narrower and more appropriate question: not "Who are you?" but "Can you prove that you are authorized?"

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Protecting Minors While Preserving Privacy

The European Digital Identity Wallet can verify that a user meets an age threshold without disclosing their name, date of birth or portrait to social media platforms. Protecting users also means limiting the information a platform is allowed to request

by Federica Paolucci

The European Digital Identity Wallet (EUDI Wallet) is an electronic identification means through which users can store and present verified identity data and electronic attestations of attributes when interacting with public and private services. Regulation (EU) 2024/1183 requires the Wallet to support both person identification data and electronic attestations of attributes, together with selective disclosure.

AGE VERIFICATION WITHOUT IDENTITY DISCLOSURE

Age verification is one use of this architecture. A service may need to establish that a person is above a given age threshold without receiving the user's name, exact date of birth or identity document. The European Commission's 2026 framework defines a proof of age attestation as an electronic attestation of attributes certifying that its holder is above a given threshold, and an EU age verification solution as an application or service, either standalone or integrated into an EUDI Wallet, through which that proof can be presented. Recommendation (EU) 2026/1035 provides that, by default, the relying party should receive only a true-or-false response to the relevant age condition and refers expressly to zero-knowledge proofs as a means of preventing tracking and identity disclosure.



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BIOMETRIC DATA AND THE PROTECTION OF THE PORTRAIT

The biometric element enters through the rules on the portrait. Commission Implementing Regulation (EU) 2026/1731 amended the technical specifications for person identification data in the EUDI context and introduced a specific Article 3a on the protection of the portrait. From 11 August 2028, the portrait is included among the mandatory natural-person identification data for selective disclosure, except where the user opts out where applicable. Where a relying party requests the portrait, the Wallet must warn the user that the request involves the sharing of biometric data and require explicit and specific confirmation.

Some distinctions are needed to move forward. Identification seeks to establish who a person is; biometric verification or authentication

PROTECTING MINORS ALSO RAISES A LEGAL QUESTION: WHETHER AGE VERIFICATION CAN DISCLOSE ONLY THE AGE-RELATED INFORMATION A SERVICE IS LEGALLY ENTITLED TO KNOW

confirms a claimed identity, ordinarily through a one-to-one comparison; age verification establishes whether a person satisfies an age threshold.
A portrait held in the Wallet may support identification or authentication where those operations are legally required. The same Wallet may instead present only a proof-of-age attestation when the relying party needs to establish an age condition. The presence of biometric information in the underlying identity infrastructure does not make its disclosure necessary for age verification. This is a delicate aspect, as also underlined by the EDPB's 2025 Statement on Age Assurance.

THE EU KIDS ACT AND MINORS' ACCESS TO SOCIAL MEDIA

This connects with the Commission's proposal for an EU KIDS Act, presented on 17 September 2026, that places age assurance directly within the conditions governing minors' access to certain digital services. Article 6 would restrict account creation and access for children under 15 on covered social networking and video-sharing services where the service presents specified risks to minors, while Article 27 requires age assurance solutions to provide a high level of accuracy, reliability, security, robustness, non-intrusiveness, privacy, data protection and non-discrimination.
For compliance with Article 6, Article 29 would require providers to use an EU age verification solution based on an independently issued EU proof-of-age attestation. EUDI Wallets certified under eIDAS and compliant with the 'Age Verification Scheme' would be treated as certified age verification solutions. The proposal uses the digital identity infrastructure without requiring the service provider to receive the identity on which the proof was originally based.

PROTECTING MINORS WITHOUT MANDATORY IDENTIFICATION

Read under these lenses, the EUDI Wallet therefore brings identity data, biometric information and age attributes into the same infrastructure, while EU age-assurance rules increasingly require their separation at the point of use. For the interest of minors, the legal issue is not only whether age can be verified accurately. It is also whether proof of age can remain limited to the attribute that the service is entitled to know, without turning a condition of access into a general requirement of identification or biometric disclosure.



Who Holds the Keys in the Quantum Era?

Research conducted with Bocconi's contribution has developed Ringtail, a shared digital signature system designed to withstand quantum attacks. Authorizing a transaction requires multiple parties to work together: no single party holds all the power

by Giulio Malavolta

Imagine a company that requires three managers to approve an important payment. Giving each manager the power to authorize it alone would defeat the rule. Giving everyone a copy of the same secret signing key would create the same problem: any one of them could act independently. Cryptography offers a way to enforce collective control. A signing key can be divided into shares, with a specified number of participants required to cooperate before a valid signature can be produced. This is called a threshold signature. The challenge is to make that cooperation secure and efficient, including against future attackers equipped with quantum computers.
That is the problem addressed by Ringtail, a system I developed with Cecilia Boschini, Darya Kaviani, Russell W. F. Lai, Akira Takahashi and Mehdi Tibouchi. Presented at the 2025 IEEE Symposium on Security and Privacy, the research combines a design intended to resist quantum attacks with an implementation tested across an international network.



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A SUFFICIENTLY POWERFUL QUANTUM COMPUTER COULD BREAK THE MATHEMATICS BEHIND SEVERAL WIDELY USED SIGNATURE METHODS

A DEFENSE THAT ALREADY EXISTS

Digital signatures help establish who authorized a message or transaction and whether its contents have changed. A secret key produces the signature; a corresponding public key allows others to check it. Connecting that public key to its legitimate owner makes the signature useful as evidence of origin.
A sufficiently powerful quantum computer could break the mathematics behind several widely used signature methods, enabling an attacker to produce convincing forgeries. The threat concerns the reliability of the checks on which digital systems depend.
Defenses are already available. The US National Institute of Standards and Technology has published standards for post-quantum digital signatures, designed to withstand attacks from both conventional and quantum computers. These protections run on ordinary computers. Organizations can begin adopting them without waiting for quantum machines to arrive.
But different uses of signatures pose different engineering problems. A method suitable for one signer

does not, by itself, provide an efficient way for several independent participants to sign together. That is where research on threshold signatures enters the picture.

SHARING AUTHORITY WITHOUT SLOWING EVERYTHING DOWN

The appeal of shared signing is straightforward. In the company example, a three-out-of-five arrangement would allow any three designated participants to cooperate. One compromised participant could not sign alone, while two unavailable participants would not necessarily prevent the others from acting. The difficulty lies in coordinating those participants. They must exchange information to produce a signature, and each additional round of communication adds waiting time. Across long distances, that delay can matter as much as the computation itself. Ringtail addresses this through a signing protocol requiring two rounds of communication. The first can be completed before the message to be signed is known, allowing some work to happen in advance. Its security rests on an established mathematical assumption known as "learning with errors," which is believed to be difficult for quantum computers to defeat; it is the same problem underlying the security of most standardized digital signatures.

THE TEST BEYOND THE MATHEMATICS

To investigate how our design performs beyond a local computer, we tested Ringtail across eight countries on five continents. Most of the overall delay came from communication across the network.
That finding makes the benefit of fewer exchanges tangible: faster calculations alone cannot make up for the time spent waiting for other participants' messages.
This is a useful perspective on preparing for quantum computing. The existence of standardized signatures answers a foundational question: there are methods available to replace vulnerable ones. Further research addresses the varied ways people and institutions need to use them.
Ringtail focuses on one of those needs: exercising authority collectively. Its practical significance lies in bringing quantum-resistant protection closer to settings where no single participant should hold all the power to sign.

THE PAPER. Ringtail: Practical Two-Round Threshold Signatures from Learning with Errors, *by Cecilia Boschini, Darya Kaviani, Russell W. F. Lai, Giulio Malavolta, Akira Takahashi e Mehdi Tibouchi*

The Digital Euro Must Win People Over

A survey of over 17,000 Europeans reveals openness to the new currency, alongside widespread concerns regarding privacy. Being able to verify one's identity when accessing a digital wallet provides reassurance, and knowing who will be able to see one's transactions remains a decisive factor for adoption

by Leonardo Maria De Rossi

Between 2016 and 2024, the share of cash transactions in the euro area fell from 79% to 52%, with significant variations between countries: in the Netherlands, cash accounts for just over one in five payments, while in Italy, Austria and Malta, it remains above 60%. The overall trend, however, is clear: Europeans are increasingly making digital payments. This shift has a consequence that often remains in the background. Currently, cash is the only form of public money in the hands of citizens, a direct liability of the central bank. In contrast, every payment made via card or app involves private money, recorded in the accounts of a financial intermediary.

Consequently, the decline in cash also means a reduction in the share of public money used in daily transactions. The digital euro is the response that the European Central Bank (ECB) is developing to address this transformation.

THE SUCCESS OF THE DIGITAL EURO WILL DEPEND ON THE CHOICES MADE BY CITIZENS

To date, the debate surrounding the digital euro has focused on technological architecture, the stability of the banking system and European strategic autonomy, all of which are important issues. Yet, there is another aspect that deserves equal attention: adoption. While the legal tender status ensures that the digital euro will be accepted for payment, it does not guarantee that it will actually be used. Citizens already have access to digital payment tools that are widespread, familiar and largely free of charge. The success of the project will therefore also depend on individual choices, guided by perceived utility, ease of use, compatibility with personal habits and trust in the institutions managing the digital euro.

DIGITAL IDENTITY AND PRIVACY: FINDING A BALANCE

At the heart of these choices lies digital identity. Any electronic currency must address two questions: who verifies the identity of the user, and who can see the transactions. Cash resolves this issue at the root, as it requires neither. A digital currency, by contrast, must strike a balance between competing needs: protecting privacy, combating money laundering and fraud, and ensuring the stability of the financial system. There is no neutral solution; every design choice distributes information, responsibility and risk in a different way.



LEONARDO MARIA DE ROSSI
SDA Assistant Professor of Practice, Leadership, Human Resources and Digital Technologies

THE PAPER. The safety-adoption tension in designing a central bank digital currency: an experimental comparison of three Digital Euro architectures, by Leonardo Maria De *Rossi, Nico Abbatemarco, Michele Russo, Stefano Caselli, Giampaolo Gabbi*

THREE MODELS COMPARED: BALANCING STABILITY AND INNOVATION

Various models are possible. In the ECB's current design, user identification is handled by banks and other payment service providers who can view the transactions, and a limit is set to around €3,000 in digital cash to protect bank deposits from sudden outflows. This is a prudent model that is well-integrated into the existing system. Alternatively, one could envision a digital currency where citizens have a direct relationship with the central bank and there are no holding limits, a system closer to the characteristics of physical cash, though it carries a higher risk of banking disintermediation and imposes new operational duties on the ECB. Another option is a token-based euro operating on an open blockchain infrastructure, featuring pseudonymous wallets and integration with the crypto-asset ecosystem; while this offers openness and programmability, it presents more significant challenges regarding anti-money laundering, consumer protection and financial stability.

A SURVEY OF 17,000 EUROPEANS

We asked EU citizens for their views: over 17,000 people across 27 European countries were reached through a collaboration with Revolut, where each person was presented with only one of the three models outlined above, without being aware of the other two. The overall reception was positive for all three. The alternatives to the established design scored slightly higher in terms of perceived utility, ease

WHILE THE LEGAL TENDER STATUS ENSURES THAT THE DIGITAL EURO WILL BE ACCEPTED FOR PAYMENT, IT DOES NOT GUARANTEE THAT IT WILL ACTUALLY BE USED

of use and trust. The proportion of respondents stating they would never use the tool stands at 24% for the digital euro, and around 15–16% for the other two models. Concerns regarding privacy and the potential for increased public oversight of spending are common across all scenarios, though such concerns are slightly lower in the case of the digital euro. Among the features considered, the status of legal currency carries the most weight in terms of a user's willingness to adopt the system.

SECURITY AND PRIVACY: THE KEYS TO BUILDING TRUST

Regarding identity, the data reveal two coexisting expectations. On one hand, citizens view the identification process required when opening a digital wallet positively, perceiving it as a guarantee of security and protection against fraud. On the other, they place great value on the privacy of individual transactions. There is no contradiction here: it is the perimeter within which any model must operate. People appear willing to undergo identification, but they demand clear guarantees regarding who has access to their payment data, for what purposes and with what limitations.

The three models are not simply "right" or "wrong" alternatives; rather, they represent different combinations of stability, privacy, openness and risk control. It is up to EU institutions and lawmakers to define the regulatory framework. The perspective of citizens can help ensure that this choice is better informed — because for a currency to fulfill its function, it must actually be used. Ultimately, asking whether citizens want the digital euro is the same as asking what kind of digital euro they would be willing to adopt.

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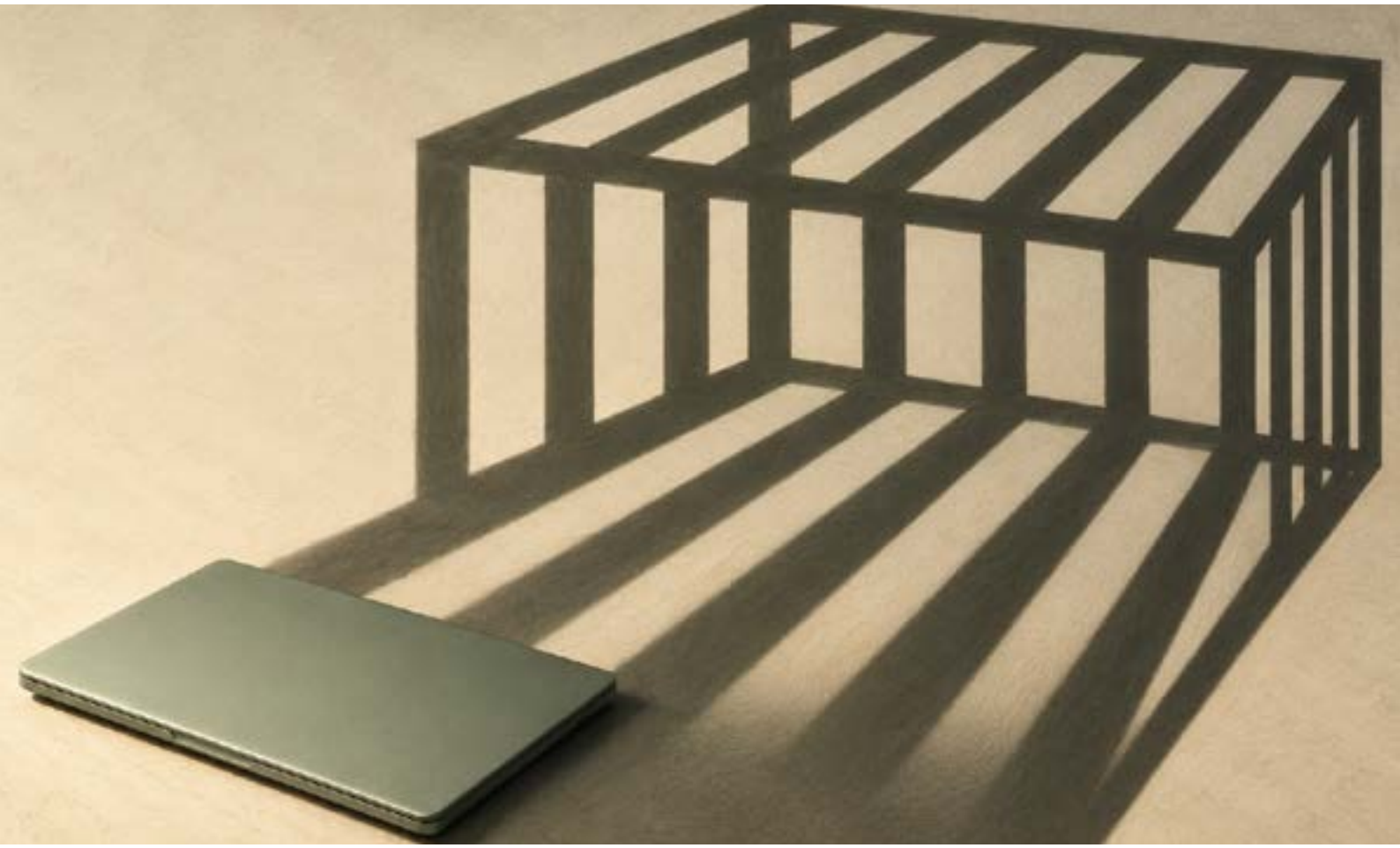
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Who Does Time Outside Working Hours Belong To?

Being constantly reachable on your cellphone or PC can curtail free time, even when no actual work is being performed. The right to disconnect requires organizational rules and collective agreements that safeguard the freedom of individuals to manage their own lives

by Elena Gramano

In labor law, time and place have long been closely tied. Work was performed exclusively on company premises during scheduled hours, and leaving the place of work typically coincided with the end of the workday. The physical presence of the employee at the workplace made both the scope of the employer's authority and the extent of the protections afforded by labor law and collective bargaining clearly visible.

WHEN TIME REPLACES PLACE

Technological and organizational shifts have gradually weakened this association. Remote work, as well as other forms of employment, such as work via digital platforms, demonstrates that tasks can be carried out outside of company premises while remaining firmly integrated into an employer's organization. Consequently, the time during which an employee must remain available, stay connected or stand ready to

perform work takes on greater significance. Personal time thus assumes a role that once belonged primarily to place, serving as the benchmark for defining the extent to which an employer's organizational power impacts an individual's life.

THE BOUNDARY BETWEEN WORK AND REST

In this context, however, EU regulations on working hours continue to rely on a binary distinction. Every period must be classified as either work or rest, with no provision for an intermediate category. This framework is being surpassed by the new ways work is organized today. In this regard, the Court of Justice of the European Union has clarified on several occasions that physical presence on company premises is not always the decisive factor in determining whether a given period qualifies as worktime. According to the Court, one must consider the intensity of the constraints placed upon the worker and assess whether they are free to manage their own time according to their preferences and interests. Consequently, a period of inactivity can still be legally significant if the individual's freedom to use that time as they wish is substantially restricted.

CONSTANT CONNECTIVITY AND INVISIBLE CONSTRAINTS

In the context of digital work, this issue manifests itself in less overt, yet more pervasive, ways. The mere possibility of receiving communications at any moment does not automatically transform every interval of time into working time. At the same time, constant connectivity can create an expectation of availability that encroaches even upon leisure time formally designated for rest. An employer's authority is not necessarily manifested through specific, direct orders; rather, it may be embedded within the organizational structure, the required response times, and the criteria used to evaluate performance.



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THE PAPER. Ragioni ed effetti della trasformazione del tempo come nuovo luogo di lavoro, *di Elena Gramano*

FLEXIBILITY AND THE QUALITY OF TIME

It follows that the issue of worktime cannot be addressed solely by counting the number of hours worked. The quality of the time that falls — at least formally — outside of one's professional duties is also of great importance. A flexible arrangement that is chosen by the employee and remains predictable can enhance their autonomy; conversely, a variable, unilaterally imposed requirement for availability produces the opposite effect, making it difficult to plan for rest or personal activities. Thus, the very same flexibility can take on vastly different meanings depending on who controls it and how it is implemented.

THE RIGHT TO DISCONNECT AND NEW FORMS OF EMPLOYEE PROTECTION

From this perspective, the right to disconnect serves as a necessary safeguard, yet it cannot be left solely to the individual employee's initiative. The right to disconnect must be supported by organizational rules that define the periods when an employee has a right to be unreachable, and that prevent constant on-call availability from becoming an implicit criterion for professional evaluation. Collective bargaining can also help manage this transition by tailoring protections to specific work environments and formalizing constraints that might otherwise remain informal.
If work is no longer defined by a specific location, it becomes necessary to recognize the significance of the time over which an organization exerts its influence. Such protection also encompasses the genuine ability to make use of the time that remains outside of one's professional duties.

THE RIGHT TO DISCONNECT SERVES AS A NECESSARY SAFEGUARD, YET IT CANNOT BE LEFT SOLELY TO INDIVIDUAL EMPLOYEE'S INITIATIVE



Private Money Is a State Affair

The European Union, the US and the UK are taking different approaches to regulating tokens pegged to official currencies. At stake are financial stability, room for innovation and monetary sovereignty in the digital age

by Filippo Annunziata

Stablecoins have grown from a marginal curiosity into instruments that move billions of dollars a day and increasingly serve as a means of payment both inside and outside crypto markets. Their promise of a fixed value against a fiat currency places them at the crossroads of monetary law, payment systems regulation and financial market supervision. The

THE DEEPER LESSON IS THAT STABLECOIN REGULATION REACHES WELL BEYOND INVESTOR PROTECTION AND FORMS AN EARLY CHAPTER IN THE REORGANIZATION OF MONEY IN THE DIGITAL AGE



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collapse of TerraUSD and FTX in 2022 made rules impossible to postpone. Within a few years, the European Union, the United States and the United Kingdom have all answered, yet each has answered in a different voice: the Markets in Crypto-Assets Regulation (MiCAR) in the EU, the GENIUS Act of 2025 in the US, and the Cryptoassets Regulations of 2026 in the UK. All three accept the same premise, namely that an instrument which is both "stable" and a "coin" performs money-like functions and therefore calls for prudential oversight. From that common starting point, however, the paths diverge markedly.

THE EU: BREADTH AND UNIFORMITY

The European Union has chosen breadth and uniformity. MiCAR is a self-standing regulation, directly applicable in all Member States, which covers the whole crypto-asset market and places stablecoins within it through two dedicated categories, asset-referenced tokens and e-money tokens. Authorization in one Member State opens the entire single market, while the European Banking Authority supervises the most significant issuers. The regime offers legal certainty on redemption rights, disclosure and reserves, at the price of high entry costs and a prescriptive style that may slow innovation. Its anticipatory character also carries a risk of misprediction, as the near-empty category of asset-referenced tokens shows.

THE PAPER. Crypto-Asset and Stablecoin Regulation: A Comparative Analysis of MiCAR, the United States GENIUS Act, and the UK Regulatory Framework, *by Filippo Annunziata*

THE US: A SECTOR-SPECIFIC APPROACH

The United States has taken a narrower, sector-specific road. The GENIUS Act regulates payment stablecoins only, leaving other digital assets to the interplay between securities and commodities law. Issuers may be banks, federally chartered entities or state-licensed firms, in a dual system that mirrors American banking. Reserves must consist of high-quality dollar-denominated assets, and interest at issuer level is prohibited. The statute treats stablecoins as money rather than as investments, but it contains no market-abuse regime and no rules for service providers, gaps that later legislation and SEC rulemaking are expected to fill.

THE UK: AN INTERMEDIATE REGULATORY MODEL

The United Kingdom occupies an intermediate position, extending the existing perimeter of the Financial Services and Markets Act to crypto-asset activities rather than building a new code. The Financial Conduct Authority supervises issuers, while the Bank of England takes over when a stablecoin arrangement becomes systemic. Two features stand out: the strong policy interest in tokenized bank deposits as a bank-centered alternative to stablecoins, and an explicit willingness to accept some transitional friction in exchange for competitiveness, as the April 2026 amendments carving qualifying stablecoins out of the dealing and arranging perimeter confirm.

PRIVATE MONEY, FINANCIAL STABILITY AND MONETARY SOVEREIGNTY

Behind these technical differences lie different conceptions of the relationship between private money creation, financial stability and monetary sovereignty. Europe and Britain worry about currency substitution by dollar-denominated instruments; the US embraces non-bank issuance as a tool of dollar competitiveness. For global issuers the result is a patchwork that may favor jurisdiction-specific products over uniform ones. The deeper lesson is that stablecoin regulation reaches well beyond investor protection and forms an early chapter in the reorganization of money in the digital age, in which private tokens, tokenized deposits and central bank digital currencies will have to coexist.



Can a Picasso Be Destroyed?

Copyright law protects works from modification, but not necessarily from destruction

by Lorenza Giordani

Imagine the owner of "Guernica" deciding to destroy the painting. No one would view this choice as a standard exercise of property rights, because the loss would affect everyone for whom the painting has become a shared memory and a piece of collective heritage. "Guernica," however, is a straightforward case: the painting is housed in a museum and is, in any event, protected under cultural heritage law. The situation is quite different for artworks that have become touchstones for a community but do not yet fall under the protection of cultural heritage legislation.

THE PARADOX OF THE RIGHT TO INTEGRITY

Copyright law distinguishes between the intangible work, the corpus mysticum, from the physical object that embodies it — the corpus mechanicum. Destroying a copy of a book does not cause the work itself to disappear, whereas destroying a painting does. Yet, Article 6-bis of the Berne Convention, the primary international instrument regarding copyright, protects a work against distortion or mutilation, but makes no mention of destruction. According to established legal interpretation and scholarly consensus, any modification that alters a work's message is unlawful, while destruction — which fundamentally prevents the work from communicating

THERE IS A REGULATORY SHORT-CIRCUIT: COPYRIGHT LAW ENDS UP PENALIZING LESS SERIOUS INTERVENTIONS WHILE PERMITTING THOSE THAT ARE IRREVERSIBLE

at all — remains lawful. This creates a regulatory short-circuit: copyright law ends up penalizing less serious interventions while permitting those that are irreversible.

THE STAKEHOLDERS: THE ARTIST, THE OWNER AND...?

Until cultural heritage law comes into play, the destruction of an artwork remains a private conflict between the artist and the owner. Both parties, however, have reasonable arguments in their favor. On one hand, the owner may have a legitimate desire to remove the work, as it is their own property, for instance, a mural painted on a wall that the owner wishes to repaint. On the other hand, the artist may have an equally legitimate desire to preserve the work's integrity, not least to protect their own artistic reputation.

Determining which side should prevail is therefore problematic. Traditional legal balancing criteria, based on the principle of proportionality, are effective for addressing instances of "abuse of rights," such as when a right is exercised solely to harm another party, but they are less suited to the more common, everyday types of conflict.

THE ROLE OF THE COMMUNITY

Furthermore, focusing solely on who is "right" leaves out a third party — often invisible, yet deeply involved: the community. When a work of visual art becomes part of the collective memory, it is no longer just the artist who has a stake in it, but also those who live in its presence and encounter it in their daily lives.

Comparative law reveals that some legal systems do not leave the resolution of such issues entirely to civil courts; instead, they employ procedural mechanisms that come into play before any destruction occurs. Certain European countries have enacted laws requiring that the artist be given prior notice and that a consultation process take place. These laws may grant the artist the right to object to the destruction, to reclaim the work, or at least document it before it disappears. The advantage is clear: in the face of an irreversible loss, a court ruling always comes too late, and financial compensation cannot restore the work itself. While these rules do not strip owners of their right to dispose of their property, they do prevent them from exercising their rights in a unilateral and abrupt manner. This opens up a space for dialogue in which interests extending beyond the relationship between author and owner, including those of the community, can be taken into account.

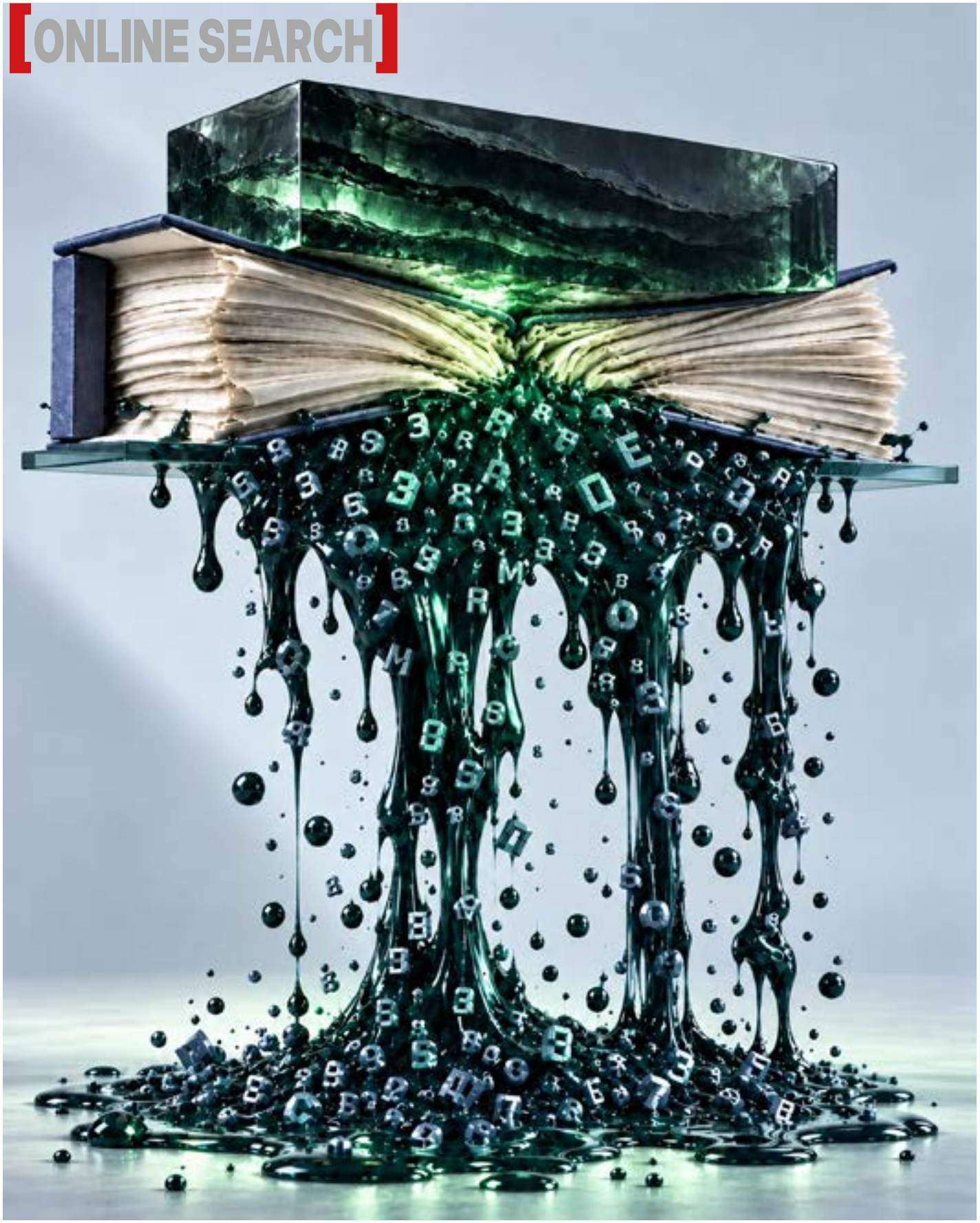


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THE LINK BETWEEN COPYRIGHT AND CULTURAL HERITAGE

Copyright accompanies a work from the moment of its creation until its release in the public domain, yet this protection ceases in the face of the work's destruction; furthermore, it typically fails to account for the bond that develops between a work of art and the community that engages with it. Cultural heritage law, by contrast, though it operates in the public interest, comes into play much later: only once the historical and cultural value of a work has been formally acknowledged, which is often decades after its creation. A gap exists between these two points in time. A work may have already become a touchstone for the community, yet may remain too "fresh" to fall under the scope of standard cultural heritage protections.

It is within this time interval that an author's right to the integrity of their work, when interpreted in a pluralistic sense, can serve as a protective "bridge." If understood as a tool capable of giving a voice not only to the artist but also to the community, and implemented via the procedural mechanisms described, it can offer temporary protection against irreversible loss, pending the application of cultural heritage law.



AI Answers, but Who Pays the Sources?

Only 5.2% of ChatGPT conversations lead users to an external website, compared with 31.1% of Google searches. For content creators, being cited by AI does not necessarily translate into traffic or revenue. A Bocconi study measures this gap

by Qiaoni Shi, Kai Zhu, Kai Gu



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Search engines connect a reader with a newspaper, a student with a reference site or a programmer with a technical guide. For the website, that visit creates an opportunity: to earn advertising revenue, attract a subscriber or build a community. What happens when the information reaches the user but the user never reaches the website?

AI SEARCH: ANSWERS WITHOUT WEBSITE VISITS

AI search acts as an information intermediary by retrieving web information and using a large language model to synthesize an answer grounded in it. A website can therefore contribute to an answer without receiving a user visit. Recognition of this search function now extends to European regulation: in August 2026, the European Commission designated ChatGPT a "very large online search engine" under the Digital Services Act.

In a new study, we examined this changing relationship using US desktop URL-level browsing records from October 2024 through July 2025. The timing allowed us to observe the initial expansion of ChatGPT Search and examine how web behavior changed as access widened.

ONLY 5.2% OF CONVERSATION SESSIONS GENERATE A RECORDED REFERRAL TO AN EXTERNAL WEBSITE, COMPARED WITH 31.1% OF GOOGLE QUERIES

FEWER REFERRALS, DIFFERENT DESTINATIONS

ChatGPT rarely sends users onward: only 5.2% of conversation sessions generate a recorded referral to an external website, compared with 31.1% of Google queries. Across the 10-month study, 74.4% of households that used ChatGPT never generated a recorded referral from it. Widespread use can therefore coexist with infrequent visits to external sources.

The visits that do occur reach a different mix of destinations. Reference, academic, developer and software websites account for larger shares of referrals from ChatGPT than from Google, while advertising-supported sites account for a smaller share. Referrals from ChatGPT are

also less concentrated across destinations when pooled across households.
The study also finds lower conventional-search use after ChatGPT Search access expands. The researchers estimate 3.14 fewer weekly Google, Bing and Yahoo queries per household gaining access, equivalent to 9.4% of their pre-expansion average of 33.51. The estimated decline is 17.0% when averaged over the follow-up from week 20 onward. Academic, reference and news websites also show declines in recorded visits through conventional search and across all traffic sources.

THE ECONOMIC CHALLENGE FOR INFORMATION PROVIDERS

For information providers, a prominent position within AI referrals may thus coexist with declining traffic through conventional search. As AI search develops, a central question is how this relationship will shape publishers' incentives to produce and maintain the information on which these systems rely.
These findings sharpen the economic question behind content licensing, attribution and compensation: how should supplying information to AI systems translate into returns for its producers?
Attribution can identify a source, but a visit creates opportunities to earn revenue and build an audience. Keeping information available and current may depend on how platforms and publishers bridge that gap.

THE PAPER.
Answering Without Referring: How AI Search Rewrites the Web's Economic Bargain, *by Qiaoni Shi, Kai Zhu, Kai Gu*

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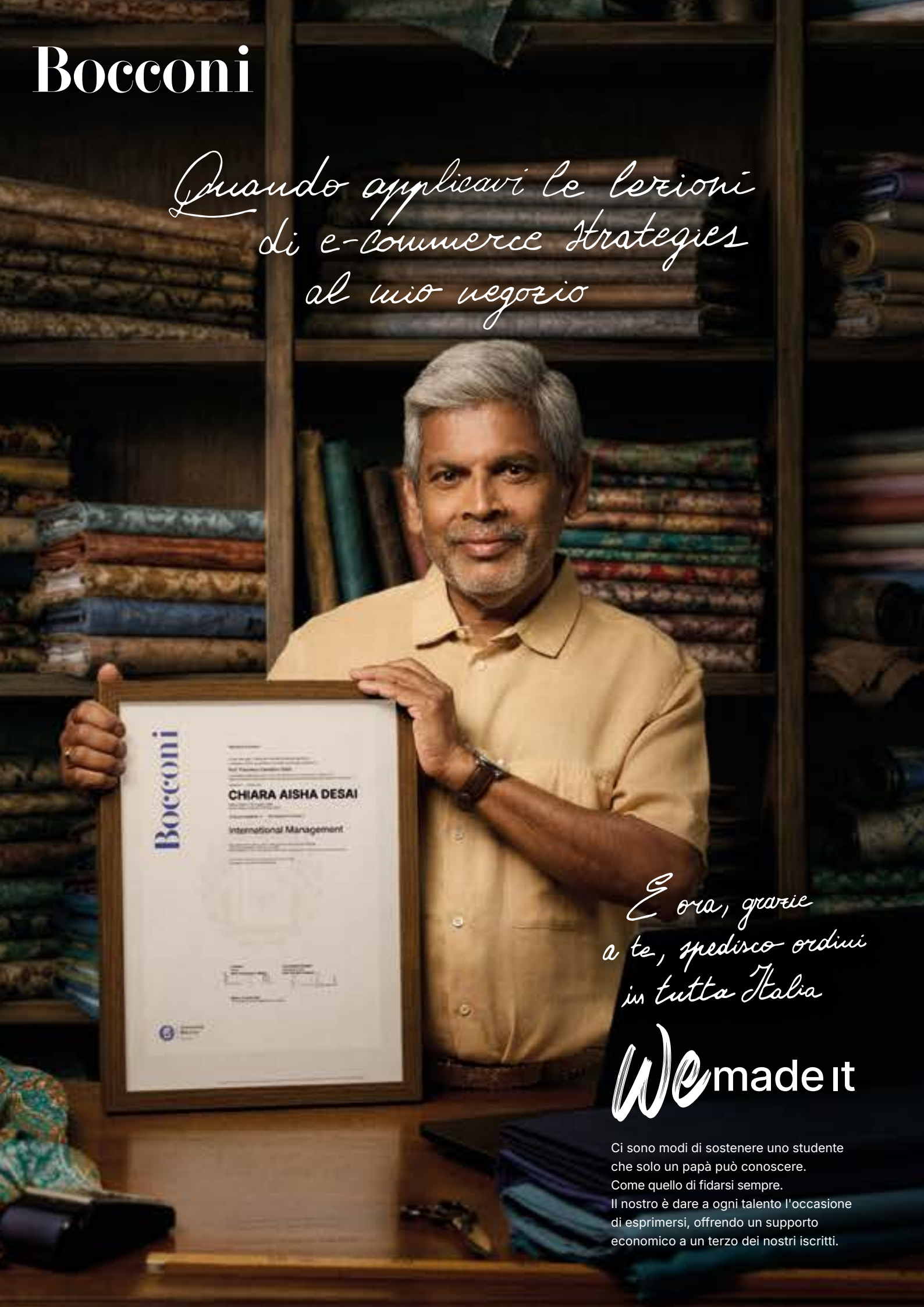
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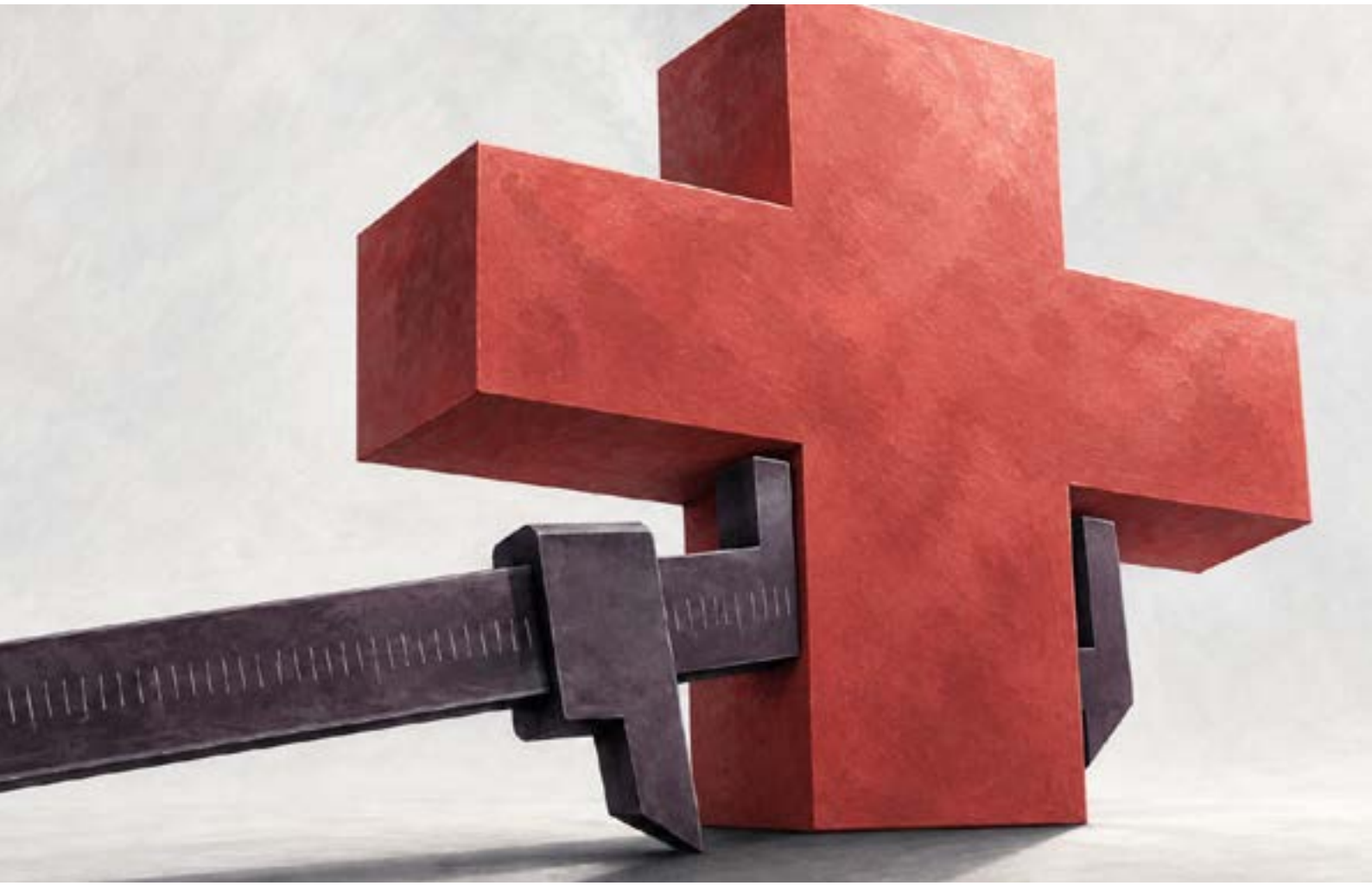
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If Medical Science Makes It Possible, Should the State Allow It?

Scientific progress expands the possibilities for medical treatment and questions constitutional rights. While available resources shape the scope of public provision, there remains a core of health protection that cannot be curtailed by budgetary constraints

by Davide Paris

Does the right to health — protected under Article 32 of the Italian Constitution — encompass a right to free access to any medical procedure made possible by the evolution of medical science?

FROM THE CONCERNS OF CALAMANDREI TO ARTICLE 32 OF THE CONSTITUTION

When Article 32 was drafted, the issue did not arise; in fact, the Constituent Assembly held concerns that were diametrically opposed. A jurist of the stature of Piero Calamandrei questioned whether it made sense to include a guarantee of the right to health in the Constitution, noting that "in Italy at this moment — and who knows for how many years to come — patients in surgical clinics are dying because there are no means to heat the rooms, so that people who have been successfully operated on by a surgeon then die of pneumonia." In Calamandrei's view, an article guaranteeing the right to health would have rung "false" and undermined the credibility of the Constitution. He suggested

that the right to health — along with education and other social rights — should instead be placed in a preamble, so that "the ordinary person reading it would understand that these are not currently granted rights, but rather intentions and programs — and that we must all work hard to ensure these programs become reality." Calamandrei's proposal was not adopted, yet the Italian Constitution became the first in an international comparative context to recognize health as a "fundamental right of the individual." Nevertheless, the concerns of that era are reflected in the cautious language of Article 32, which addresses the right to free healthcare services: the Republic "guarantees free medical care to the indigent."

THE ITALIAN NATIONAL HEALTH SERVICE AND THE UNIVERSALITY OF CARE

Law no. 833/1978, which established the Italian National Health Service, went beyond the literal requirements of Article 32, implementing it in an expansive manner. The healthcare law is rooted in the principles of universality, meaning that individuals, by virtue of their humanity, are the intended recipients of these services, rather than only those who are "indigent," and comprehensiveness, encompassing not just medical treatment, but also prevention and rehabilitation. Does this, then, imply a right to receive any medical service free of charge?



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THE RIGHT TO HEALTH AND THE CONSTRAINT OF FINANCIAL RESOURCES

Certain rulings by the Italian Constitutional Court in the 1990s have helped answer the question. In ruling no. 455 of 1990, the Court stated that the right to receive medical treatment "is guaranteed to every person as a constitutional right, subject to the implementation provided by the ordinary legislator, an implementation that involves balancing this right against other constitutionally protected interests, while taking into account the objective limitations the legislator faces, given the organizational and financial resources available at any given time." It is, therefore, not an absolute right, but one that must be reconciled with other rights, with due regard for the limits of available resources.

WHEN THIS INCOMPRESSIBLE CORE OF THE RIGHT TO HEALTH IS AT STAKE, THE NECESSARY RESOURCES MUST BE FOUND; THE RIGHT CANNOT BE CURTAILED

This assertion is as self-evident (how can a right be guaranteed if there are no resources?) as it is concerning: taken to the extreme, it could strip a constitutionally enshrined right of its substance, reducing it to something that exists only insofar as there are financial resources to implement it. Ruling no. 309 of 1999 provides a crucial clarification on the issue: while the Court acknowledges that the right to health is subject to constraints imposed by available financial resources, it also maintains that "the requirements of public finance cannot, in the legislator's balancing process, carry such overwhelming weight as to compress the irreducible core of the right to health protected by the Constitution as an inviolable aspect of human dignity." In short, while the level of protection given to the right to health may vary depending on the financial resources actually available, there remains a guaranteed threshold — its "irreducible core"— that cannot be compromised. When this incompressible core of the right to health is at stake, the necessary resources must be found; the right itself cannot be curtailed.

WHO DETERMINES THE CONTENT OF THE RIGHT TO HEALTH?

What does this irreducible core encompass? In a pluralistic society, the answer to this question cannot come from a single source, nor is it set in stone. It is primarily the responsibility of the political sphere — and thus of Parliament — to define the content of the right to health; however, this determination is subject to oversight and potential correction by the judiciary, and by the Constitutional Court in particular. It must be recognized that, in various ways and forms, neither politicians nor judges can make decisions without taking into account what society as a whole, at a given historical moment, is prepared to accept.

A Threshold to Evaluate Health Spending

Cost-effectiveness analysis compares the benefits of a healthcare policy intervention with the resources required to implement it. Establishing evidence-based criteria helps public administrations set priorities and ensures transparency in decision-making

by Giovanni Fattore

For private goods that are left to markets, prices ensure the balance between supply and demand. The inevitable rationing of scarce resources is thus managed through individual choices, constrained by personal income and wealth. In contrast, when it comes to public goods — provided either free of charge or at a price well below their actual cost — public institutions must explicitly define criteria for rationing. Since the early 1900s, economists have developed a logical and methodological framework to provide tools for this purpose. Known as cost-benefit analysis (CBA), this framework has been upgraded by the contributions of prominent contemporary economists, including Nobel laureate Amartya Sen.

COST-EFFECTIVENESS ANALYSIS (CEA) IS ONE OF ECONOMIC SCIENCE'S MOST SIGNIFICANT CONTRIBUTIONS TO SOLVING SOCIAL ISSUES



GIOVANNI FATTORE
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FROM COST-BENEFIT ANALYSIS TO THE MEASUREMENT OF HEALTH

CBA has offered techniques for decision-making in various sectors, including transport, infrastructure, environmental protection, education and healthcare. In all these sectors except health, the prevailing approach involves estimating social costs and social benefits in monetary terms to arrive at a measure of the "net benefit" of expenditure, which helps determine whether an intervention is economically desirable. In healthcare, however, a different approach has dominated since the 1980s, according to which the value of a medical intervention is expressed in terms of cost per quality-adjusted life year (QALY), which is the cost per year of living in a state of perfect health. Thanks in part to the pioneering work of Michael Drummond, a Bocconi professor, there is a model for evaluating healthcare choices. In this model, new interventions such as a vaccine, a piece of technology or a climate change mitigation strategy are compared against the status quo ante, considering both the change in resources consumed (costs) and the

health outcomes achieved (specifically, QALYs).
This metric for measuring health gains bridges the work of economics and psychometrics researchers, serving as an example of effective and socially useful interdisciplinary collaboration.
It is no exaggeration to say that cost-effectiveness analysis (CEA) of which the cost-per-QALY metric is a core component represents one of economic science's most significant contributions to social policy: providing rational tools to support decisions aimed at protecting public health.
Naturally, like all economic models, the cost-per-QALY approach relies on certain assumptions and simplifications that leave several questions open, areas where research is ongoing and there is a lively debate.

THRESHOLD VALUES AND PUBLIC DECISION-MAKING

The decision to develop CEA using indicators of costs and QALYs has helped gain acceptance for economic rationality among medical professionals and public authorities. It is easier to convey the significance of an indicator presented in terms of "health gained" than to present a net measure of wellbeing expressed in monetary terms, not least because the monetization of benefits often clashes with ethical sensibilities and mindsets that differ from those of economists.
Nevertheless, the issue of giving money value to health really never goes away.
Once it is established that an intervention costs €100,000 per QALY gained, what guidance does this provide to a public decision-maker?
There is the issue of the threshold value. To give operational meaning to cost per QALY, a reference threshold value is required: interventions below such a threshold should be implemented, while those above it should be shelved.

TWO APPROACHES TO DETERMINING THE VALUE OF HEALTH

Determining this threshold is particularly challenging, not only due to its methodological and empirical complexity, but also because it lies at the intersection of economic rationality and other forms of reasoning, such as those centered on the primacy of rights or professional medical ethics.
Economists, however, propose two approaches.
The first approach looks at what public systems already provide by calculating the implicit cost-per-QALY of the services offered. In simpler terms, if the Italian Health Service provides services with a marginal cost-per-QALY of €50,000, then that figure serves as the threshold value. The second approach is based on the scientific assessment of what individuals desire or actually do; in this case, the threshold value represents the maximum sum of money one is willing to pay for a QALY.

THE CHALLENGE FOR THE ITALIAN HEALTH SERVICE

In practical terms, the prevailing consensus points to a threshold value comprised between €30,000 and €50,000 per QALY. In Italy, too, the community of health economists have reached agreement around this range of values. Establishing a threshold value grounded in robust scientific research is essential for guiding public policy, especially at this critical juncture for the Italian Health Service, when it is increasingly clear that providing everything to everyone is not feasible, making it necessary to ensure "value for money" in health spending.



THE BOOK. *The digital transformation of healthcare is a concrete necessity.* Sanità connessa *by Gianluca Dotti (Egea, 2026, 132 pp., €16.90) explores the technological infrastructures, data and Artificial Intelligence applications that are reshaping the healthcare ecosystem - connecting hospitals, community healthcare services, professionals and citizens within a single intelligent network. Drawing on multidisciplinary contributions, the book examines digital platforms, interoperability, telemedicine, cybersecurity, data governance and AI-enabled organizational models.*

The Value Beyond the Price

Recovered productivity, reduced reliance on family caregivers and future treatment opportunities: some of the benefits of new therapies are not captured by traditional measures. Broadening the assessment can help avoid rewarding only those drugs that resemble the treatments of the past

by Patrizio Armeni

In recent years Italy has taken an important step in the negotiation of medicine prices. Since the 2019 decree on pricing negotiation criteria, economic evaluation has been a mandatory part of the dossier a company submits when seeking a price and reimbursement for a new medicine. And this evaluation carries growing weight in the decision-making process. A study by the Italian Medicines Agency (AIFA) researchers with the University of York, covering 48 negotiation procedures, shows that the incremental cost-effectiveness ratio (ICER) is among the main determinants of the outcome of negotiation, particularly when it exceeds €40,000 per quality-adjusted life year (QALY, equivalent to one year of life in perfect health). Reimbursed medicines leave the negotiation with an average ratio of around €33,000 per QALY (calculated on the net prices actually paid by the Italian National Health Service). This is good news, especially considering that a similar study of the 2013–2017 negotiations had concluded that the final price was driven mainly by financial considerations.



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WHEN MEASUREMENT STRUGGLES TO KEEP PACE WITH INNOVATION

Alongside the good news, some reflection is needed, because decision frameworks evolve far more slowly than innovation trajectories and, as a result, any revision of the decision framework risks being obsolete at birth. Among health technologies, medicine is the one for which cost-effectiveness-based pricing works best: efficacy is established in pivotal trials (and, to date, rarely revisited in the light of real-world evidence) and the price remains stable once negotiated. For the pharmacology of recent decades this was also a good approximation of value: a medicine that extends survival and improves quality of life in a serious disease generates almost all of its value within that perimeter. Even for medicines, however, that perimeter is becoming narrow.

FOR THERAPIES AVAILABLE TODAY AND THOSE THAT WILL BECOME AVAILABLE IN THE FUTURE, A SIGNIFICANT PORTION OF THE VALUE GENERATED GOES BEYOND WHAT IS MEASURED BY QALYS

THE HIDDEN VALUE OF NEXT-GENERATION THERAPIES

The innovation paradigm is shifting. The therapies arriving today, and above all those still to come, target early treatment, remission and functional recovery, and conditions whose burden falls largely outside the healthcare system: obesity, chronic dermatological diseases, addictions, neurodegenerative diseases. For these therapies a substantial share of value arises outside the perimeter captured by QALYs (especially when short-term outcomes are given priority). The new therapies have a far greater impact on recovered productivity, the informal care spared to families, the reduction of uncertainty about outcomes and real option value, that is, the possibility of accessing future innovations thanks to early intervention today. In 2018 the ISPOR task force led by Darius Lakdawalla catalogued precisely these elements as a part of value that economic evaluations currently recognize least. In 2025 the CERGAS-SDA Bocconi Observatory on Pharmaceuticals (OSFAR) analyzed the access barriers facing these new therapies in Italy, France, the United Kingdom and Germany, finding that assessment models are not yet equipped to fully capture their contribution to society and to the health system.

THE RISK OF REWARDING YESTERDAY'S INNOVATION

A clear risk follows. If prices track an ICER computed on only a few dimensions (such as survival and quality of life), the therapies of the new paradigm will show very high incremental ratios and will be penalized even when they generate substantial value. The result will be to reward above all the innovation that most resembles yesterday's: medicines for serious conditions with an immediate, visible impact on survival. Conversely, there will be less room for anything that could prevent a condition from becoming serious, or even prevent a disease from arising in the first place.

BEYOND COST-EFFECTIVENESS: REDEFINING VALUE

The solution lies not only in working on cost-effectiveness thresholds but in incorporating more dimensions of value into the decision framework. Raising the threshold would pay more for all therapies indiscriminately (or in a discretionary way, if raised only for certain categories of medicines), and the problem would remain unchanged in its priorities.

The tools to measure these dimensions already exist. The first is to adopt a societal perspective when a disease carries a significant burden outside the healthcare sector. The second is to include patient-reported outcomes into dossiers. The third is to assess real option value explicitly for early therapies. The fourth is to make visible in the dossier what share of the expected value arises outside the healthcare perimeter, so that negotiation can take it into account. Some signals are already there: for example, AIFA's new 2025 criteria for therapeutic innovativeness admit patient-reported outcomes and patient-reported experiences.

Italy has made great strides in making sure price follows measured value. The next step is a decision that comes before negotiation: which dimensions of value we truly want to recognize, so that tomorrow's decisions do not mainly reward yesterday's innovation.

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Innovation Cannot Be Assessed Just Once

Medical devices and algorithms continue to evolve even after they enter the market. Ongoing assessment based on real-world clinical data is therefore essential, together with pricing and reimbursement models linked to the outcomes actually observed

by Rosanna Tarricone

Scarcity is the starting point of economics. In healthcare, limited resources must meet potentially unlimited needs. To get the most health from a given budget, health economists compare the costs and outcomes of new technologies with those of existing alternatives. These cost-effectiveness assessments guide decisions about where to spend. Their key measure is the incremental cost-effectiveness ratio, or ICER: the extra cost of gaining an extra unit of health, such as a quality-adjusted life year (QALY). The next question is whether that gain is worth its price. This measure helps anchor price negotiations for medicines, devices and digital technologies in evidence. But when is an ICER too high? The threshold should reflect what society is willing to pay for better health, a figure that is hard to establish objectively and is therefore often set somewhat arbitrarily. The UK's National Institute for Health and Care Excellence (NICE), for example, uses a range of tens of thousands of pounds per QALY.

WHY TRADITIONAL ASSESSMENTS FALL SHORT

This approach works reasonably well for medicines. They usually enter the market with a defined dose and effectiveness established in clinical trials, while their negotiated price tends to remain stable during the patent period. It works less well for medical devices, and may work poorly for artificial intelligence.

AN ALGORITHM CAN BE RETRAINED AND CONTINUE LEARNING AFTER IT HAS BEEN ASSESSED: THE TOOL USED TOMORROW MAY DIFFER FROM THE ONE JUDGED TODAY

MEDICAL DEVICES: CHANGING COSTS AND UNCERTAIN VALUE

Devices change constantly. Clinicians need time to learn to use them, and their value often depends on changes in the organization around them. Many never reach a steady state at which costs and outcomes can be measured once and for all. Prices change too: public tenders can quickly push down the price of older technology. Drug-eluting stents provide a striking example. When NICE reassessed them, their effectiveness had not changed, but the sharp fall in the price of bare metal stents raised their ICER enough to call the original recommendation into question. Patients risked losing access to a treatment approved only a few years earlier. That raises a question of equity as well as efficiency.



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DIGITAL HEALTH ACCELERATES THE CHALLENGE

Digital health magnifies the problem. Medical apps and digital devices may be updated every few weeks and rolled out to additional users at almost no extra cost. Their health benefits depend on how people use and engage with them, and the relationship is rarely

simple. Each update can change effectiveness, costs and the ICER calculated at the time of assessment.

ARTIFICIAL INTELLIGENCE PUSHES ASSESSMENT TO ITS LIMITS

AI takes this challenge further. An algorithm can be retrained and continue learning after it has been assessed: the tool used tomorrow may differ from the one judged today. Every part of the ICER can shift. Costs change as subsequent care pathways change. Benefits change as performance changes, and can even worsen when a new hospital's patients, scanners or data differ from those used for training. The alternative against which the tool is compared may itself be an evolving AI system. Even the time horizon is uncertain: discounting costs and benefits beyond a year assumes a stability that may not exist.

FROM FIXED VERDICTS TO CONTINUOUS EVALUATION

Do the ICER and its threshold still make sense? For medical devices, experts have long proposed reassessing them throughout their lifecycle to capture changes in costs and benefits. The same logic applies to digital health and AI, and is reflected in the direction taken by health technology assessment agencies and the EU's new Health Technology Assessment Regulation. Yet these technologies evolve faster than any fixed reassessment timetable can follow. We should therefore treat the ICER as a changing measure, rather than a final verdict: track technologies with data from routine care, and link reimbursement and price to the performance actually observed. Continuing to measure cost-effectiveness in this way is essential if we want to reward innovation that truly creates value.

Global Markets, Unequal Access to Care

The QALY measures one year of life in full health. However, the amount healthcare systems can spend to gain one varies widely across countries. Differential pricing and international cooperation are therefore crucial to protecting access to treatment

by Aleksandra Torbica

A quality-adjusted life year (QALY) is meant to be a universal unit: a year in full health is the same everywhere. What society is prepared to pay for it is not. In recent years the debate has moved away from "willingness to pay" towards the supply-side view that a threshold should reflect health opportunity cost: the health lost elsewhere in the system when resources are committed to a new technology. Applied across countries, this logic produces striking results. Estimates for 174 countries range from under US$100 per QALY in the Democratic Republic of Congo to almost US$100,000 in the United States, and fall below one GDP per capita in 97% of countries. Building on the Commission on Macroeconomics and Health, which valued a year of healthy life at about three times per capita income, WHO-CHOICE classified interventions as "very cost-effective" if they cost less than one GDP per capita per disability-adjusted life year averted, and "cost-effective" if below three times that amount. This rule of thumb, long used in low- and middle-income countries (LMICs), has since been abandoned as far too permissive. It labels as cost-effective interventions that, once funded, displaced more health than they produced.



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THE INEQUALITY BEHIND NATIONAL THRESHOLDS

The divergence in thresholds

THRESHOLDS GROUNDED IN OPPORTUNITY COST REFLECT WHAT A HEALTH SYSTEM CAN AFFORD AT THE MARGIN, NOT THE INTRINSIC VALUE OF A HUMAN LIFE

across countries should not be interpreted as a methodological weakness, but rather as the direct consequence of profound inequalities in health budgets: thresholds grounded in opportunity cost reflect what a health system can afford at the margin, not the intrinsic value of a human life. This distinction is far from trivial, since the alternative interpretation, namely that a year of healthy life in Ouagadougou is worth a thousandth of one in Boston, is precisely the normative objection that critics of the QALY framework have long raised. The difficulty, therefore, lies less in the heterogeneity of thresholds than in the fact that the markets and policies determining the prices of health technologies operate increasingly at the global level, whereas thresholds remain an inherently national construct. Three tensions follow from this mismatch.

WHEN PRICING BECOMES TRADE POLICY

The first tension concerns pricing. Thresholds differing a thousand-fold are compatible only with differential pricing, whereby each country pays according to its ability to pay. Yet external reference pricing has long undermined this, encouraging manufacturers to delay or forgo launches in low-price markets. The pressure is now explicit: the 2025 US "most-favored-nation" policy links domestic prices to those paid abroad, and the United Kingdom has responded by raising the National Institute for Health and Care Excellence range to £25,000–35,000 per QALY from April 2026 under a trade agreement. A parameter intended to measure health opportunity cost is becoming an instrument of trade policy, and if thresholds rise in high-income countries for reasons unrelated to their health systems while prices converge, countries with the lowest thresholds will be the first to lose access.

SHRINKING AID AND THE CHALLENGE OF UNIVERSAL HEALTH COVERAGE

The second tension arises from the contraction of global health financing. Development assistance for health fell by about one fifth in 2025, to its lowest level in 15 years, and programs deemed worthwhile by donors' implicit standards must now compete within domestic budgets and national thresholds. Without credible priority setting, these transitions risk being determined by default rather than by evidence. The institutionalization of health technology assessment in LMICs, through explicit benefit packages and transparent processes, therefore becomes a precondition for universal health coverage rather than a technical refinement.

The third tension relates to global public goods. Vaccines, antimicrobials, pandemic preparedness and climate adaptation generate benefits that extend across borders, which national thresholds by construction disregard. A country evaluating a vaccine, for instance, accounts only for cases averted within its own jurisdiction. Applied country by country, cost-effectiveness analysis will systematically under-invest in the goods that matter most collectively.

TOWARDS FAIRER THRESHOLDS AND GLOBAL COOPERATION

The policy response cannot be a single global threshold, which would be either unaffordable for the poorest countries or irrelevant for the richest. Countries, Italy included, require thresholds grounded in their own evidence on health opportunity cost, which would also make them more resistant to industrial and trade pressures. Differential pricing deserves protection, for instance by restricting reference-price baskets to countries of comparable income, while carefully balancing the confidentiality of net prices against the transparency on which public accountability depends. Evidence can be pooled while value judgements remain national: the EU Health Technology Assessment Regulation, which centralizes clinical assessment while leaving economic evaluation to Member States, offers a model for regional cooperation in Africa, Asia and Latin America. Distributional cost-effectiveness analysis, in turn, provides tools to make equity explicit, while cross-border benefits require supranational financing that no national threshold can deliver.

A threshold mirrors the constraints of a health system; the real risk is not that these mirrors differ across countries, but that we stop asking why they do.

Politics Must Be Clear About the Tradeoffs

Allocating resources to one priority means subtracting from others. When matters of life and death are at stake, there are four basic methods of allocation: market allocation, government regulation, medical committee and random selection; yet no method disposes of the need to justify one's decisions

by Giovanni Tuzet

Normative decisions regarding life and death are the most difficult of all. What technologies should be permitted to facilitate the birth of human beings? What procedures should be allowed for the termination of pregnancies? To what extent should medical assistance be permitted in terminating one's life? Withdrawing life support to someone is not equivalent to a lethal injection, but isn't the outcome effectively the same when a patient cannot survive without medical equipment? And in the space between the alpha of birth and the omega of death, what proportion of public resources should be devoted to healthcare? How many hospitals, doctors and nurses are needed, and how much funding should go toward medical research? The problem, as economists well know, is that resources are always scarce in relation to the many objectives we wish to achieve. We want to accomplish a great deal, but it is not possible to do everything at once. In a complex society, where individuals and groups pursue diverse and often conflicting objectives, this challenge is only amplified.

LIMITED RESOURCES AND THE RESPONSIBILITY OF PUBLIC DECISION-MAKING

We complain when a maternity ward is closed, but we also complain when the roads are in poor condition. We would like to have more parks — well-maintained and safe, of course. We might also want a public swimming pool closer to home, but also a drama theater. And everybody wants more cultural and educational opportunities. Furthermore, we demand that trains be more punctual and that there be fewer accidents on rail lines, while simultaneously calling for higher frequency, in turn, increases the risk of delays and accidents. And so on. Every activity, every achievement, every increase in activity requires resources, thus entailing a tradeoff because resources are limited.

The responsibility of policymakers and legislators is deciding how to allocate scarce resources, and what priorities to pursue according to which criteria. Deciding where to invest, who to finance, who to protect most, when to favor private initiative and which interests to suppress: all this should be done with transparency. For electoral and consensus reasons, it's understandable that politics emphasizes what voters have prioritized, not what they have put aside. But in the eyes of a clear-eyed observer, both count equally (and academia is the place to cultivate research free from partisan interests).

THE RESPONSIBILITY OF POLICYMAKERS AND LEGISLATORS IS DECIDING HOW TO ALLOCATE SCARCE RESOURCES, AND WHAT PRIORITIES TO PURSUE ACCORDING TO WHICH CRITERIA. ALL THIS SHOULD BE DONE WITH TRANSPARENCY



GIOVANNI TUZET
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TRAGIC CHOICES AND THE FOUR METHODS OF ALLOCATION

When choices are strictly speaking about life and death, they take on

a tragic quality. In a justly famous book (Tragic Choices, 1978), Guido Calabresi and Philip Bobbitt observed that, in the distribution of scarce goods, a society is called upon to decide which allocation methods should be adopted. They gave the example of artificial kidneys for dialysis, for which demand significantly exceeds supply. A similar example is the allocation of organs for transplants. There are fewer organs than patients require. Summarizing what Calabresi and Bobbitt wrote, we can distinguish four allocation methods: 1) market allocation, 2) allocation according to general criteria established by a political authority, 3) allocation according to specific circumstances assessed by expert authorities and 4) random allocation.

THE MARKET AND THE DECISIONS OF POLITICAL AUTHORITIES

The first method leaves allocation of resources to the market, depending on willingness to pay based on individual preferences. Do we have only one heart ready for implant and 10 patients requesting one? One approach is to set up an auction, to see who is willing to pay the most to obtain it. It is a draconian and morally problematic criterion, if not downright offensive to conscience. It allows the wealthy to survive while condemning the poor. Yet, proponents of the economic analysis of law like Richard Posner have sought to highlight certain positive aspects of the market approach. One is that funds raised in this way could be used to further finance medical and scientific research, yielding broader benefits for all.
The second method entrusts centralized political authorities (typically legislators) with the task of defining the requirements for allocating certain scarce resources, e.g. using life expectancy as a general criterion for organ transplants. While this approach offers the advantage of general applicability, it carries the risk of failing to provide sufficient guidance for deciding over specific cases.

THE ROLE OF EXPERTS AND THE RISK OF DISCRETIONALITY

The third method delegates allocation to decentralized decisions made by expert authorities, such as medical committees in the health industry. This has the benefit of allowing decisions on specific cases, based on available information and the expertise of those making the choices. However, it presents the problem of shifting the responsibility for inherently political and moral decisions onto experts, along with the risk of granting them too much discretion. What guarantees that an expert won't make decisions based on personal friendships or self-interest?

RANDOM SELECTION, IMPARTIALITY AND THE LIMITATIONS OF EACH METHOD

The fourth method offers the benefit of absolute impartiality and egalitarianism: it is blind chance choosing, and we're all equal in that respect. However, its limitation is that it takes no reasoning into account. One could envision the combination of several methods, and employing procedures and criteria designed to mitigate certain risks. What we must not do is ignore the problem.

The Right to Choose Cannot Wait

Marco Cappato, Treasurer of the Luca Coscioni Association and a Bocconi Alumnus, calls for clear timelines and adequate services for end-of-life care. At the heart of the issue are individual self-determination and the quality of care, ranging from palliative treatment to psychological support

by Camillo Papini

Some have gained access to end-of-life procedures and followed them through to the end. Others have requested them in order to spend their final years with a better quality of life. Then there are those who have chosen to go on living, who want to be sure their right to choose would be respected. In an era where the population is aging and life expectancy is increasing, and concepts like wellbeing and the relationship between citizens and the healthcare system are becoming ever more critical, while issues such as disability demand greater attention, "it is time to stop treating the end of life as something alien to our society. One need only look at the variety of requests — including people suffering due to inadequate healthcare or those in need of palliative care or perhaps requiring psychological support," says **Marco Cappato**, Treasurer of the Luca Coscioni Association and President of Eumans, a civic

movement for EU-wide initiatives. The core issue, therefore, is no longer a binary debate between those who are for and those who are against end-of-life options, but rather the individual right to self-determination and the ability to access high-quality services in a timely and reliable manner, according to the Bocconi University alumnus (who holds a degree in Business Administration).

In an Italy that still lacks a national law, with regions acting in a fragmented way, it is difficult to imagine how freedom of choice might be guaranteed...

The Constitutional Court of Italy's landmark ruling no. 242 of 2019 decriminalizes medical assistance in voluntary death under certain conditions (irreversible medical conditions, intolerable physical or mental suffering, the capacity to make autonomous decisions and complete dependence on life-support systems —Editor's note). It also clearly establishes that the National Health Service is responsible for verifying whether these conditions are met and, if so, for supporting the individual making the request. Since 2019, 19 people have successfully accessed the procedure for end-of-life care, nine of them in the first nine months of 2026 alone. This suggests that the Constitutional Court's ruling is becoming increasingly well-known among patients.

IT'S TIME TO STOP TREATING END-OF-LIFE CARE AS SOMETHING FOREIGN TO OUR SOCIETY

So, beyond the core issue of freedom of choice, is there also a procedural hurdle, even when the request has been approved?

Requests do not come solely from regions that have enacted specific end-of-life legislation, namely Tuscany, Sardinia, Emilia-Romagna and Veneto. In regions lacking such regulations, the time factor becomes a major issue. This is because, even when a request is granted, a long period of time is often required to organize the practical aspects of a procedure that has not yet been formally regulated or standardized. This can mean years of prolonged suffering for patients. In contrast, the National Health Service could potentially intervene much earlier, while other treatment options are still available.

Could the slow handling of end-of-life cases also be a matter of costs?

Economic factors play a significant role in the end-of-life debate, in several ways. There are the expenses borne by families, followed by the costs incurred by the National Health Service. For instance, Eluana Englaro was kept in a vegetative state for almost 17 years. More importantly, the absence of national legislation creates a "gray area" characterized by clandestine practices, as well as the risk of abuses and suicides. And yet, according to many studies, the majority of Italians are in favor of euthanasia. Unfortunately, however, this is not on the political agenda — even though the most significant aspect of the end-of-life debate, I repeat, is free choice. A patient may consent to receive treatment, but if they deem those therapies inadequate, they should have the right to discontinue them, without anyone forcing them to continue.

It seems strange that, in an era of longevity, personalized therapies and the aid of new technologies, there is no equally comprehensive approach to the end of life as you advocate for.

The phenomenon of "aging" concerns not only the length of one's life but also the quality of the years that remain to be lived. This is precisely why greater awareness is needed, so that every individual can be empowered to take responsibility for the care they receive and for their own end-of-life experience. This represents a major cultural shift. Finally, I would add that new technologies can help citizens become better informed and more engaged, and, consequently, better equipped to exercise their rights.



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Impact Begins After the Promise



Michael Sheldrick, author of From Ideas to Impact*, explains how to bridge the gap between promises and results: measurable goals, coalition-building, listening to communities and the ability to turn ambition into concrete action.*

by Andrea Celauro

There is no shortage of ideas. What is too often missing is the ability to turn them into results. It is from this gap between promises and real-world impact that Michael Sheldrick, author of *Dalle idee all'impatto* — published by Egea, the Italian edition of his book *From Ideas to Impact* — sets out to examine public policy, social change and the climate transition.
Sheldrick focuses on a handful of crucial steps: setting measurable goals, assigning clear responsibilities, listening to the communities involved and continuing to track what happens after announcements are made. This is the foundation of what he calls "pragmatic idealism:" holding firm to one's principles while accepting compromises that can genuinely move change forward.
Drawing on real-world examples from activism, business, climate policy and social rights, Sheldrick shows why vision, coalition-building and the ability to deliver must go hand in hand.
The book identifies an "implementation

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crisis:" solutions exist, but often fail to materialize. What features of institutions and decision-making processes fuel this gap between ideas and results?
I see four recurring problems. First, we often confuse shared ambition with a concrete plan. It is easy to agree that children deserve a better education, but harder to define what must change, who will be responsible and by when. That is why the first step in my book is to define a clear, measurable policy goal.
Second, responsibility gets split up. The person making the promise may not control the money, and the person controlling the money may not deliver the service.
Third, we design solutions without listening to the people affected. When you do this, you risk solving the wrong problem and treating people's objections as something to overcome rather than something to learn from.
Finally, we celebrate too soon. This is not just a government problem. Campaigners and organizations can declare victory after an announcement and move on. But leaders change, budgets shift and new crises demand attention. A promise needs people, funding and continued scrutiny behind it, or it can quietly fall apart.

A PROMISE NEEDS PEOPLE, FUNDING AND CONTINUED SCRUTINY BEHIND IT, OR IT CAN QUIETLY FALL APART

That is why my book gives equal attention to three roles: the Visionary who sets the goal, the Diplomat who brings people together and the Implementer who makes sure the work gets done.

"Pragmatic idealism" calls for accepting compromises to achieve tangible change. What criteria distinguish a useful compromise from abandoning fundamental goals?
I think the important distinction is between compromising your values and compromising on the route you take to advance them.
That distinction matters enormously to me because policy entrepreneurs operate in the real world. Our institutions are imperfect. Governments are imperfect. Markets are imperfect. The people we have to work with are imperfect. The question is not just what an entirely new system might look like, but what we can achieve with the institutions, resources and opportunities that exist today.
Good compromise means being clear about your ultimate objective while recognizing that you may not get everything you want immediately.
That is what I mean by pragmatic idealism: stay committed to the ideal while being realistic about the path toward it. Understand the system as it is, identify the levers within reach and use them to move it closer to where it should be.
But there are guardrails. One is "do no harm." Does the compromise actually improve the lives of the people affected, or does it make things worse? And critically, have we listened to those people in making that judgment?
The other test is whether a compromise moves us forward or locks us in place. The Paris Climate Agreement was imperfect. It did not deliver everything needed to address climate change. But the alternative was no global agreement at all. Getting countries into a common framework created a basis for increasing ambition over time.

Storytelling plays a central role in the approach outlined in the book. How can a narrative mobilize people without oversimplifying complex problems or cherry-picking the data that best support a cause?
I think good storytelling is about clarity, not simplification. You don't need to tell people everything you know. A story should be illustrative, not exhaustive.
I talk in the book about two kinds of stories.
The first is the story of why. Why do you care about this? Why are you asking me to care? Too often, we finally get 10 minutes with a decision maker and, because we are so excited to have their attention, we unload every statistic, argument and piece of research we have. You can almost see their eyes glaze over. People want to understand your motivation and why they should trust you before they absorb a briefing paper.

But today, the story of why is not enough. People are surrounded by stories telling them how bad the world is. They are also crying out for stories of how: show me that something can actually be done, show me how someone else did it and show me where I fit.

A public commitment is not the same as a result. What tools enable citizens to verify that governments and businesses keep their promises, especially when targets extend beyond the tenure of political or corporate leaders?
This is why I devote an entire section of the book to the Implementer. A commitment is only the beginning. The challenge is making sure it survives the person who made it.

A COMMITMENT IS ONLY THE BEGINNING. THE CHALLENGE IS MAKING SURE IT SURVIVES THE PERSON WHO MADE IT

There are increasingly sophisticated tools to help. At Global Citizen, the advocacy organization I cofounded, for example, we developed systems and frameworks using Salesforce, with pro bono support from PwC, to track tens of billions of dollars in commitments: what was promised, what has actually been delivered and what remains outstanding. Transparency and independent verification make it much harder for a pledge to simply disappear. But one of the biggest lessons for me is the importance of building institutions and constituencies that outlast individual leaders.

The case of period poverty in South Africa shows that recognizing a right is not enough to ensure people can exercise it.
You're right. South Africa has one of the world's most progressive constitutions, including a right to education. But, like many societies around the world, many adolescent girls in South Africa miss significant amounts of school because they cannot afford period products.

In 2018, a movement emerged, driven largely by young women and grassroots advocates. They successfully pushed President Cyril Ramaphosa to commit to providing period products in schools. But what I find most important about their story is that they didn't treat the announcement as a victory.
That persistence produced real progress. The tax on sanitary pads was removed. Government funding increased. By the end of 2023, more than 4.3 million students had received period products through the program. But progress is not the same as completion. Significant gaps remain around funding, provincial delivery, infrastructure and stigma.

Collie's transition away from coal places workers and community participation at its heart. What conditions make a transition truly just, and how can the time needed for economic transformation be reconciled with the urgency of climate action?
A truly just transition starts by asking the community affected: what does a successful transition actually look like for you?
In Collie, a Western Australia coal town for more than a century, the workers' goal was not just to save individual jobs. It was to ensure the town survived once the coal-fired power stations are switched off in 2030.
Workers, unions and community leaders helped shape the plan, while the government enabled it through investment, retraining and incentives for new industries. And that gets to the tension between justice and urgency. Climate change is urgent, but abruptly closing a power plant or coal mine without a credible alternative can destroy trust and livelihoods, and ultimately create resistance to the transition itself.

The book assigns businesses a role in reshaping the rules of markets. How can commercial interests be steered toward collective goals while ensuring that priorities continue to be set through democratic processes?
Ultimately, yes, democratically accountable governments have to set the rules of the market and determine the public interest.
But businesses can play an important role

BUSINESSES CAN PLAY AN IMPORTANT ROLE IN SHOWING WHAT BETTER RULES COULD LOOK LIKE AND GIVE POLICYMAKERS BETTER EVIDENCE ABOUT WHAT IS POSSIBLE

in showing what better rules could look like and give policymakers better evidence about what is possible.
I explore this in the book through the example of the British company, Octopus Energy. Its founder, Greg Jackson, entered a highly regulated energy market where building new onshore wind in England had become extremely difficult. Rather than simply waiting for government policy to change, Octopus experimented within the rules that existed.
One example was its "Fan Club," which offered cheaper electricity to communities living near wind turbines when those turbines were generating power. It helped show something policymakers had underestimated: communities were more likely to support renewable infrastructure when they could see it and share the benefits, in this case lower energy bills, directly.

Carbon credits highlight the tension between the need to fund forest conservation and the risk of greenwashing. What conditions must these instruments meet to deliver verifiable climate benefits and give Indigenous communities genuine decision-making power?
I think carbon credits are one of those ideas that make enormous sense in theory, and we probably need them now more than ever. As government aid declines, we need new sources of finance that reward communities for protecting forests and biodiversity. The principle extends beyond forests too. If we want to retire relatively young coal plants in countries such as Indonesia or the Philippines, somebody has to help finance that transition.
The problem with carbon markets is not necessarily the idea. It is trust. In the book, I write about how confidence in the voluntary carbon market collapsed after legitimate questions were raised about whether some credits represented real emissions reductions and whether communities were receiving a fair share of the benefits. Unfortunately, when companies walked away, credible projects and communities lost funding too.
So rebuilding trust requires a few basic tests. Can you prove the climate benefit? Is there independent verification and accountability? Are companies using credits in addition to cutting their own emissions, instead of as a substitute for doing so? And, crucially, do Indigenous communities have genuine decision-making power and receive a fair share of the value created? Free, prior and informed consent cannot be a box you tick once. It has to be an ongoing process.



THE BOOK. *In a world marked by polarization, distrust and increasingly complex crises, change depends not only on the quality of ideas, but also on the ability to translate them into effective policies and collective action. Drawing on his experience leading Global Citizen campaigns, which have helped mobilize more than $40 billion in support of social and environmental initiatives around the world, Michael Sheldrick offers a practical guide for anyone seeking to create real impact. (Egea, 2026, 288 pages, €28,90, in Italian.)*

La vera infrastruttura del futuro sono le competenze umane.



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