Too risky to cover

Floods, fires, and heatwaves are redrawing the map of insurability. Climate risk is testing the limits of both markets and governments

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Academic year opening ceremony 2025-2026

Time to Make Choices. Think Responsibly, Act with Vision by Francesco Billari, rector

In a world gripped by health, environmental, technological and geopolitical crises, Rector Francesco Billari urges us not to be bound by indecision, but to turn knowledge into responsibility and progress.With this message, Bocconi opened its 124th academic year

Text:

The start of an academic year is more than just a date on the calendar. It is a new beginning, a collective opportunity to reaffirm who we are and where we want to go. It is the moment when we as a community renew our choice to be here.

We live in accelerated and complex times, marked by the continuous overlap of multiple emergencies–health, environmental, geopolitical, technological–that make it difficult to look ahead. Yet, it is precisely in these moments that choices matter most. Because by not choosing and postponing, we give in to indecision which is already a form of choice, and often the riskiest. For this reason, as we open the 2025–2026 academic year, we want to reaffirm the value of well-considered decisions, of time invested in knowledge and care. And we do so while working on the new 2026–2030 Strategic Plan, which will put this kind of awareness at its core, the fact that every educational and scientific choice is an act of faith in the future.

To those who are joining our university this year–the 5,000 new students and the 15 new faculty members who have enriched our faculty–I extend my warmest welcome. You are joining a community that puts at its center the idea of the university as a public good: a place of freedom, openness and responsibility. Here the diversity of disciplines, cultures and visions is not a given to be managed, but an asset to be cultivated: it is what we call “superdiversity”, the condition that allows us to address the complexity of the present and imagine solutions for the future.

This vision translates into concrete actions every day. In teaching, where learning becomes experience: from the legal labs of the Bocconi School of Law to the immersive learning promoted by BUILT and our Schools; from the Master of Science in Artificial Intelligence, which opens a new track in Turin, to the upgraded program in Innovation, Technology and Entrepreneurship, which strengthens our entrepreneurial vocation, thanks also to initiatives such as B4i and the TEF Ignition program.

The same applies to research, which we consider as a civic as well as an academic engagement. The 72 projects funded by the European Research Council, 36 of which are currently active, testify to the quality of our commitment to empirical investigation, as do new partnerships with global players like OpenAI, which pave the way for a conscious and critical use of artificial intelligence in the social sciences.

But a community is also measured in terms of how it chooses to put knowledge at the service of others. We do this with third-mission projects such as the UNICORE program for young refugees. We do it with the fledgling Health Emergencies Analytics Lab (HEAL), which addresses public health challenges by taking a systemic approach. And we do this with tools like the Democracy Monitoring project, which helps us rigorously and continuously assess the state of health of our democracies.

In an era marked by widespread social anxiety, especially among young people, giving back time to thought and reflection is not a luxury, but a democratic necessity. And the university can be, today more than ever, the space where such possibility is cultivated. A place where we learn to choose, to ponder and build together.

Choosing to be present today means recognizing the value of shared time. It means not letting ourselves be overwhelmed by haste, but giving meaning to every decision we make. This is what we do at Bocconi, every day. Together.

Startups

Rules, Capital and Ideas

Fromlegal barriers that hinder Venture Capital to the need to generatemore business ideas and promote diversity, Europe's startup scene is looking for new momentum. Starting fromB4i, Bocconi for Innovation, Bocconi is focusing on TEF, Tech Europe Foundation, to strengthen the innovation ecosystem

The Law Is Holding Capital Back by Luca Enriques

Europe suffers from a structural lag in new venture investment compared to the United States. A Bocconi study reveals that the problem is not just economic, but legal: corporate rules limit contractual freedom and hinder Venture Capital

Text:

Venture Capital (VC) is widely recognized as a critical engine for innovation and economic growth, fueling high-tech startups and driving job creation. While the United States boasts a highly dynamic VC market, Europe has historically struggled to keep pace, exhibiting a persistent and significant funding gap. New research, however, reveals a key, often overlooked, determinant of this transatlantic disparity: corporate law's role in hindering VC investments.

My studies (co-authored with Tobias Tröger and Casimiro A. Nigro) delve into the intricate relationship between legal frameworks and VC contracting, particularly focusing on Germany and Italy as representative European jurisdictions. The core finding is that the sophisticated and presumptively efficient contractual framework that underpins US VC deals – crafted over decades to address inherent uncertainties, information asymmetries and moral hazard in startup financing – is remarkably difficult to "transplant" into these European contexts. This leads to a significant "functionality gap" between US and European VC agreements.

The primary culprit is not always explicit "blackletter law" provisions, but rather the pervasive interpretations that constitute "corporate law in action". These interpretations, shaped by legal scholars, notaries, courts and arbitrators, often introduce a web of implicit mandatory rules and standards that curtail contracting parties' ability to engineer optimal VC contracts. Consequently, key US-style provisions like convertible preferred shares, automatic and cumulative dividends, and robust liquidation preferences are largely deemed unviable, or their enforceability becomes uncertain. This forces venture capitalists and entrepreneurs to resort to "inferior alternative arrangements" that are less effective and ultimately less valuable.

How can this finding be explained? To answer this question, we focus on Italian corporate law and find a response in its legal culture, which in turn is affected by at least four factors. First, historically, the dominance of banks in corporate finance fostered a demand for rigid laws, with little pressure for flexibility. Second, the self-interest of legal professionals plays a role, as a complex, mandatory framework increases demand for their services and rents. Third, a distrust of markets among (legal) elites contributes to a general aversion to private ordering. Finally, we argue that academics' incentives play a role too: amid such an environment, scholars are more likely to gain recognition by "finding" novel mandatory principles that limit contractual freedom than by advocating for legal deference to existing private solutions.

The practical consequences are stark: at the margin, the cost of capital for European startups is higher and the VC market less dynamic. Attempts by German and Italian

startups to sidestep these domestic constraints by incorporating abroad are often costly and impractical, especially for early-stage firms, and do not fully resolve the issue. Critically, formal contracts are not mere guidelines; their enforceability profoundly impacts financial returns, particularly during economic downturns when disputes are more likely to arise.

To address this challenge, policymakers must move beyond traditional deregulatory statutory reforms. Instead, our research recommends proactive measures such as statutory provisions that explicitly insulate US-style VC arrangements from restrictive interpretations. Additionally, devising standardized, legally enforceable model charters aligned with US VC transactional practices could significantly enhance Europe's venture capital landscape, fostering innovation and growth.

Box: The paper
Venture Capital Contracting as Bargaining in the Shadow of Corporate Law Constraints, by Luca Enriques, Casimiro Antonio Nigro, Tobias H. Troeger

The Glass Ceiling of Female Founders by Michele Fioretti

A new study reveals how family obligations and harder access to networking continue to hinder access to venture capital for female entrepreneurs, despite their performance and potential

Text:

In a world that celebrates innovation and entrepreneurial boldness, unequal access to capital remains a silent but persistent gender barrier. Over the past decade, startups founded by women in the United States have gained visibility in the venture capital landscape. But behind apparent progress lies a less flattering reality: while the number of deals struck by female founders is growing, the average amount of capital raised remains significantly lower than male-led startups. You might call it Gender Gap 2.0. In a recent study, Chuan Chen, Junnan He and Yanrong Jia and I address this imbalance with an econometric study that combines economic theory and unpublished data on startups and accelerators. Our intuition is as simple as powerful: considering accelerators as "colleges for startups," capable of signaling the quality of a fledgling company in the eyes of investors. By estimating a matching model for VCs and startups – and post-accelerator performance – we were able to isolate the role of gender in the ability to raise funds. The result? Startups with at least one female founder are less likely to obtain significant funding, even with the same level of observable quality.

But what lies behind this gap? The paper documents an oft-ignored mechanism: the reluctance – or impossibility – of many female founders to move to other states to benefit from additional investment. The geographic constraint, often linked to family obligations, reduces access to networks of contacts, mentorships and investors. However, when female founders manage to overcome the family household constraint and have access to more competitive programs, the gender gap tends to narrow over time, a sign that the problem is not related to entrepreneurial potential but to initial conditions of access.

We also highlight a more optimistic aspect: the positive effect of network and group size. Accelerators with larger cohorts and consolidated networks help reduce the gap, creating spaces where mentorship, peer learning and social capital can become levers of gender equity. In this sense, policies for the design of acceleration programs should be tuned to contemplate tools of active inclusion. A concrete example? Women who attend higher-quality accelerators tend to close the gap five years after admission, a sign that the quality of the innovative environment can make a difference.

The findings of our study go beyond an assessment of the men-women divide. Our method is also useful to better understand the factors that really make the difference for the success of a startup. Our approach is not limited to looking at visible data, such as industry of operation or founders' curricula, but is also able to take hidden variables into account, such as founders' motivation or contact networks. This way of analyzing things can be useful in other contexts, too; for example, to understand the difficulties encountered by those who live far from major urban centers or start from disadvantaged conditions.

Because promoting equity in financing is not just a question of justice. It is also a strategy that can mobilize untapped entrepreneurial talent and support more inclusive and resilient economic growth. For comparable levels of firm quality, startups founded by women tend to have a lower failure rate and have the same likelihood of being acquired by a larger corporation as male-founded counterparts. Today more than ever, capital must learn to recognize value beyond prejudice. Because potential has no gender, but opportunities often do.

Box: The paper
Accelerating Equity: Overcoming the Gender Gap in VC Funding, by Chuan Chen, Michele Fioretti, Junnan He, Yanrong Jia

The Emirates and Saudi Arabia? They Are Running Fast by Michele Chicco

In Gulf states, the system incentivizes innovation and everything runs much faster. Just think that in 2024 the UAE and Saudi Arabia raised $1.8 billion in investments, compared to Italy's $1.2 billion. Young companies find a favorable environment and investment is also flowing from abroad, explains Chiara De Caro, Bocconi alumna and Managing Director of AGCC, a global startup accelerator

Text:

She was supposed to stay in Dubai for three days, the time to exchange business cards with promising investors and head back home. She has ended up staying there for three years and has no intention of leaving. "The United Arab Emirates can be looked at as a startup, if you compare them to Western countries," says Chiara De Caro, Bocconi alumna and Managing Director of AGCC, an accelerator that helps governments, companies and startups undertake innovation paths. It was natural for her to anchor in the Gulf: those who sail in search of new tech treasures know what seas you need to sail.

What is it like to innovate in this part of the world?
Compared to Europe, there is a substantial difference: here there is a nascent system. Consider that Saudi Arabia opened to the outside world only six years ago. The startup market is particularly recent and perhaps immature, but it is moving at a much faster speed than in the West: I started working on my first startup in Italy in the 2000s and I can assure you that the evolution was much slower.

A velocity favored by the amount of capital circulating in the Gulf...
Available capital is greater, but funding no longer is only domestic: data shows that 46% of invested capital comes from the United States, with foreign countries paying increasing attention to this part of the world. While previously people came here knocking on doors to collect money, now they bring it. And this happens because the whole system is much faster and more reactive, it is not just about budgets.

What does that mean?
It's all different compared to Europe, let's say that the United Arab Emirates and Saudi Arabia are startup economies compared to the West. A change initiated by governments

that have incentivized, helped and strengthened the innovation ecosystem also with deregulation mechanisms and more flexible laws compared to Europe, which allow you to test products and do things that you could only imagine elsewhere. In short, there is an understanding here that the possibility of diversifying the economy comes from innovation, so programs such as UAE 2030 and Saudi 2030 have been promoted with the intent to spread digital culture across society.

What is the effect on the venture capital market?
Investments run at a different pace here. In 2024, Italy recorded $1.2 billion in investments, in the Middle East-North Africa $2.2 billion were raised, of which 45% in the United Arab Emirates and 35% in Saudi Arabia. Almost $1.8 billion between the two. And the 2025 figure will certainly be much higher: just considering May, investments in the United Arab Emirates are 30% higher than in the whole of 2024. We are talking about a lot of money.

Where is investment directed?
There is a lot of focus on the early stage, and it is normal if we remember that this is a growing ecosystem without too many companies to support in the scaleup phase. Like any emerging market, at the beginning there was a lot of copycat of what worked in other countries, just think of Talabat's food delivery platform. There is also a lot of fintech, as it is always one of the first areas of interest, even if now the interest of investors is shifting to sustainability and artificial intelligence. Over the last three years I have also noticed greater quality in the startups being created: there are still the traits of the immature ecosystem, but everything is developing quickly.

Innovative companies also respond to the needs of the territory. What is being asked from innovation?
For the Gulf, there are some particularly relevant sectors, linked to agriculture and water management. Technological solutions that impact these segments can be successful even if you don't have anything disruptive at the moment. Our job at AGCC is to bring advanced technology to the territory and enable entrepreneurs to grow and expand their business ideas in the rest of the world by having at their disposal facilities, money and a strategic geographic position.

What kind of startuppers can you find in Dubai and Riyadh?
The profile of young entrepreneurs has changed a lot, because those who come here now stay for a long time. They are often expats coming from Singapore, Hong Kong or the United States. Citizens of the world who want to profit from the strong growth of the Gulf. Those who come to set up a startup find that quality and talent are not lacking here.

For a Future Full of Winning Ideas by Pietro Masotti

Italy ranks eighth in the world economy but only 33rd in unicorn value. What's missing isn't capital, but ideas strong enough to compete and endure, argues Luca de Angelis, Bocconi alumnus and new CEO of the Tech Europe Foundation (TEF). Created by Bocconi, Fondazione Politecnico di Milano, the ION Foundation and FSI, TEF supports young talent in turning research into viable businesses through ecosystem support, funding, and entrepreneurial training

Text

Italy is eighth in the world in terms of GDP, but only 33rd in terms of the value of its unicorns. The gap between scientific excellence and entrepreneurial weakness is measured in ideas that don't blossom outside of universities, or that don't grow enough to compete in the open market. In a country where there is little investment in R&D,

both public and private, and where technology transfer from universities to companies is still sporadic, a true systemic engine for innovation is lacking. To help fill this gap, Tech Europe Foundation (TEF) was created jointly by Fondazione Politecnico di Milano, Bocconi University, the ION Foundation and FSI, with the aim of supporting fundamental and applied research, spreading entrepreneurial culture and boosting startups from their earliest stages. "Capital for good ideas is never lacking, but we have too few of them, they don't systematically mature, and when they do emerge, they are often too weak to survive," remarks Luca de Angelis, Bocconi alumnus and CEO of the Foundation. "We're just getting started," de Angelis clarifies. "We've assembled an initial team, developed an intervention approach and built the first research programs: we've already funded doctoral and postdoc scholarships for over 30 researchers who will arrive at Milanese universities this fall, and we'll fund 70 more by the end of the year. Furthermore, we'll soon launch TEF Ignition, the educational program designed to spread entrepreneurial culture among undergraduate and graduate students, and we'll begin looking around to see if there are any interesting startups worth supporting."

What role will TEF play once fully operational?
TEF will be the segment that, in our opinion, is currently missing from the system. Someone who intervenes before venture capital and is responsible for fueling the innovation ecosystem by helping to generate more ideas that can emerge, grow, develop and reach maturity. Our intention is to work with universities to manage to stimulate as soon as possible entrepreneurial ideas among young people, so that new ventures emerge in large numbers again. We'll do this through three major pillars of intervention: supporting research, developing a funding model that allows us to select ideas capable of generating spillovers; entrepreneurial training for young people, to expose them to responsibility and decision-making from the outset and lower the average age of business failure; and programs for startups.

So, even ahead of the difficulty of transforming startups into companies, in Italy we have a problem in terms of the quantity of ideas?
It is so, as the Bank of Italy confirms in its Venture Capital outlook: in Italy, there is little, either public or private, R&D being done, and there is little technology transfer from universities to companies. And this explains why – despite excellent scientific output – there is a lack of entrepreneurial ideas from the outset; the innovation process still is not as systematic as it is in Munich, Zurich or London. At the Station F Campus in Paris 1,000 new startups arrive each year; in Italy, there are approximately 12,000 registered startups in total, 9.5% fewer than in 2023 (registered innovative startups, Q4 2024 vs Q4 2023, MIMIT data).

Where does TEF start from to fill this gap?
From universities, because while it's true that technology isn't developed only in universities, it's equally true that no deep tech innovation system can do without universities. Universities are always the harbingers of innovation. However, the academic system must be cross-fertilized and, alongside scientists and researchers, there need to be professional figures who think about the entrepreneurial development of companies. We don't want to turn universities into factories, but rather to help research do its job and, at the same time, create a path for some initiatives to become businesses. While we support the best ideas with research funding, we also seek future founders who can bring these ideas to fruition. The TEF Ignition program, intended for students in their first years of a program, is a first step on this path. We want to give this imprint to young people by providing a little theoretical knowledge and a lot of practical experience: we will provide a €2,000 budget to a team of students so they can practically develop their own entrepreneurial idea. We will allow them to confront all the real-world problems that

might arise, albeit at a smaller scale. There will be tutoring and meetings with successful founders, but the possibility of failing is also contemplated. And of trying again. Emerging talent from TEF Ignition will have access to more comprehensive and complex mentorship programs. Once fully operational, we will fund 200 teams per year, up to 1,000 students from Bocconi and Politecnico.

Among the first scholarships to PhDs and postdocs already awarded, which projects have you selected?
We've focused on both pure, cutting-edge research and work that improves on existing technology, for example, by taking some medical devices already on the market a step further, and on projects that go "More than Moore", that is, beyond Moore's Law on microprocessors, addressing bottlenecks related to the size or energy consumption of circuits. But there's also more experimental research, for example, to understand how to create an energy system outside of Earth. We are talking about a first step in a program that plans to offer over 200 PhD scholarships and 60 postdoc grants.

Until what stage will TEF finance startups in their growth?
The intention is to help startups reach seed stage. We will work in synergy with PoliHub and B4i-Bocconi for Innovation. Italy lacks a "certification" mechanism for startups. I don't mean this in a technical sense, but figuratively: a platform that helps investors understand what's happening in Italy, simplifies the selection of companies to invest in and gives guarantees on their provenance or genesis.

Does TEF focus more on nurturing Italian talent or attracting international students?
It's a false dichotomy; the best system is heterogeneous: one comes from one country, one from another, and together they create something new here. The challenge lies precisely in being able to do in Italy what happens elsewhere in other great schools like UnternehmerTUM in Munich, ETH in Zurich, Imperial in London, MIT in Boston... One of the reasons Italy participates so little in European innovation is because we don't engage with that world; that is, we lack examples of European innovation here. The success of TEF won't be measured by the number of Italian startups sold to a Munich-based venture capital firm, but by the number of young people from Munich or Paris who choose to come here to develop their startup projects.

You have a degree from Bocconi, a double master's degree from Harvard, you worked as a financial analyst, and you have held high-profile public jobs... What prompted you to accept to head TEF?
In TEF, I saw all the ingredients needed to build something that doesn't replace the innovation ecosystem, but integrates it to make it function better: there are strong universities, patient capital, the role of the Chamber of Commerce and the willingness of all these stakeholders to speak the same language. If today Italy underperforms with respect to Germany or France, and productivity has stagnated for 20 years, it's also because it has few large technology companies. This has had a real impact, for example, on the professional lives of my generation, on average incomes that remain low or on the stagnant labor market. I can't resign myself to this situation and I firmly believe that we need a relaunch operation that acts as an exogenous shock to force Italy to engage with the world as an equal on these issues. This is the impact TEF can have, and this makes me think it's the place I want to be today.

Becoming Founders: Numbers, Alliances and New Horizons for B4i

Founded in 2019 as the entrepreneurship hub of Bocconi University, B4i-Bocconi for Innovation has already made a profound mark on the Italian innovation ecosystem. With

over 635 supported entrepreneurs, 68 accelerated startups, more than 172 pre-accelerated teams, a total of over €50 million raised by startups in the network and more than 200 jobs created, B4i is now one of the most dynamic organizations in Italy for training and accelerating new entrepreneurs.

“Our goal,” explains Nico Valenti Gatto, Operating Director of B4i, “has been to put founders’ needs at the center from the beginning. We offer tools, expertise, access to investors and an extraordinary entrepreneurial community, but above all, an environment where you can ask tough questions, receive honest feedback and grow faster.”

B4i’s offer is based on three pillars: the Pre-Acceleration program, dedicated to teams that have an idea that needs development; the Acceleration Program, for startups already at the prototype stage; and the new Future Founders Program, launched in 2025 to train tomorrow’s potential entrepreneurs. Each of these programs combines training, mentorship, technical support and concrete networking opportunities with investors, mentors and business partners. Activities take place both online and in person at the B4i headquarters in Milan, where over 25 startups have found a home.

The list of new firms that have passed through B4i is long and varied, ranging from health technologies (like Rilemo) to mobility solutions (Cargoful), from artificial intelligence (Nando, Scavenger) to data analysis (Mine Crime). Some have grown to the point of attracting international investors or establishing significant industrial partnerships. Others, as often happens in the world of startups, have stalled. But this, too, is part of the process. As Valenti Gatto reminds us: “What matters is what you learn, the connections you build, and the energy you put into trying again.”

What makes the B4i model distinctive is its focus on entrepreneurial culture. “It’s not just about creating companies, but about spreading a mindset that pushes you to innovate, experiment and not be afraid of making mistakes,” continues Valenti Gatto. “That’s why we also work with other Milanese universities, for example, as part of the MUSA/PNRR project. We organize events, challenges and innovation programs for students, alumni and investors.”

This constantly growing community, which in 2024 saw over 2,200 participants in events, more than 200 active Alumni Angels and more than 50 Italian and international venture capital funds involved, is supported by over 400 mentors, 59 professional services partners and more than 30 law firms that collaborate on Legal Clinics, pro bono legal support programs for startups created in collaboration with the Bocconi School of Law. This successful model has also given rise to the Sustainability Clinics Service, dedicated to strategic support for startups in the scale-up phase.

The skills developed at B4i will also play a key role in revising the program of the Master of Science in Economics and Management of Innovation and Technology, which, starting in the 2026-2027 academic year, will be renamed Innovation, Technology and Entrepreneurship. This is not just a title change, but a profound rethinking of the program’s identity, which will include a novel focus on entrepreneurship, developed in collaboration with B4i. “We work closely with the faculty to offer academic training programs that emphasize learning by doing,” emphasizes Valenti Gatto. “Entrepreneurship is no longer just an individual vocation: it is a skill that we can and must teach, practice and transmit.”

This direction is also strengthened by the growing synergy with the Tech Europe Foundation (TEF), the foundation born to accelerate the conversion of scientific research into business creation, founded by Bocconi together with Fondazione Politecnico di Milano, the ION Foundation, FSI and the Milan Chamber of Commerce. B4i’s consolidated experience represents a key asset. The two worlds complement each other: on the one hand, TEF is building a European infrastructure for deep tech, on the other, B4i offers an

already operational model, rooted in practice and capable of generating measurable results. “TEF is the bridge between deep tech research and business companies and rests on solid foundations, such as those built by B4i and the other promoters of the initiative,” concludes Valenti Gatto.

Today, B4i looks ahead, strengthened by the results already achieved and aware that innovation is built every day. Startup after startup, founder after founder.

Behavioral Economics

How Memory Shapes Risk by Andrea Costa

A study by Nicola Gennaioli (Bocconi) and other international researchers proposes a new cognitive model of belief formation based on selective memory, similarity, and mental simulation

Text:

How do we formulate beliefs when faced with something completely new, like a pandemic or the AI revolution, for which we have no comparable past experience to rely on? Traditional economics says that we should resort to statistics and rational inference, updating our beliefs along the way as if we were all Bayesian calculators. But real life doesn't work like that. During Covid, people didn't just look at data, they felt fear, remembered their loved ones who had gotten sick and imagined worst-case scenarios.

In their recent article "Imagining the Future: Memory, Simulation, and Beliefs", published in the Review of Economic Studies, Nicola Gennaioli (Department of Finance and IGIER, Bocconi), Pedro Bordalo (University of Oxford), Giovanni Burro (University of Heidelberg), Katherine Coffman (Harvard Business School), and Andrei Shleifer (Harvard University) present a new model of belief formation which is based not on statistics, but on the psychology of memory, mental simulation and similarity of experiences. Their hypothesis is that we don't just calculate, but we also remember, compare and imagine. And that is what makes all the difference.

The theory: beliefs are built by selective memory

Gennaioli and his co-authors argue that faced with novel risks, we simulate outcomes by remembering past experiences, especially the ones that seem similar to the current threat. But our brain does not remember everything equally. It favors experiences that are more vivid or easier to recall, even if they are only loosely related. This selective memory process gives rise to two effects: simulation boost (if an experience seems similar to the current threat, it increases our estimate of the danger); interference effect (the same experience can crowd out memories that are more relevant, distorting our judgment).

They write: "When a person thinks about an event, different experiences compete for retrieval, and retrieved experiences are used to simulate the event based on how similar they are to it." The idea of similarity-driven memory simulation is a stark departure from classical economics, which presupposes that people act on the basis of coherent and relevant information.

The model introduces a hierarchy of experience effects based on similarity. Domain-specific (DS) experiences, such as knowing someone who had COVID, carry more weight. But Non-domain-specific (NDS) experiences, such as remembering a hospitalization for another illness, can still influence beliefs, sometimes more so.

The COVID experience: when memory beats data

The authors tested their theory using three US surveys conducted in 2020. The results were striking. On average, people significantly overestimated the COVID death rate, placing it around 8.6%, whereas scientific estimates put it at just 0.68%. Moreover, individuals who had recently been hospitalized for unrelated reasons tended to hold a more pessimistic view of the virus.

Even more surprising is the fact that older people, who were most at risk, were less pessimistic than younger people. Why? The authors argue that this is because older individuals have more life experiences, which dilute the memory signal of COVID-specific

risks. Their minds were crowded with dissimilar experiences that interfered with the more relevant ones.

As the authors argue, “experiences and their measured similarity to the cued event help account for experience effects, priming effects and the interaction of the two in shaping beliefs.”

The experiment: cyberattacks and priming

To further test their model, the researchers conducted an experiment on beliefs about cyberattack risks in 2023. Participants were asked to recall a specific past experience (such as identity theft or financial stress) before estimating the likelihood of a serious cyberattack. This is technically called “priming.” The key findings reveal that priming was effective: when participants were reminded of similar experiences, they tended to estimate the risk of a cyberattack as higher. However, the effect depended on how similar the experience seemed to them. For example, reminders about identity theft had a stronger impact than those about financial stress. Most notably, priming one specific experience reduced the influence of others, supporting the hypothesis of cognitive interference.

This experiment provided strong confirmation of the theory, the authors find: “Beliefs are shaped endogenously by what is recalled and how it is used, and in particular that domain-specific experiences may fail to be retrieved.”

Navigating the unknown

We don’t think according to clear-cut categories, but in terms of memories. When the future is uncertain, we simulate what might happen using the past we can remember, not just the facts we know. This path-breaking research study doesn’t just show that memory influences beliefs, it shows how it does so and why it matters.

By basing belief formation on similarity, selective recall and mental simulation, the authors offer a cognitive model that helps explain why people overreact to rare events, underreact to actual risks, and can disagree strongly even when faced with the same reality. This is a surprising reframing of how individual judgment works, not as a flaw in reasoning, but as a deeply human mechanism for navigating the unknown.

Box: the paper

Imagining the Future: Memory, Simulation, and Beliefs by Nicola Gennaioli, Pedro Bordalo, Giovanni Burro, Katherine Coffman, Andrei Shleifer.

Inflation

The Causes of an Overheating Economy

The increase in prices hasmultiple causes, including sectoral dynamics, labormarket tightness and collective expectations. A societal challenge that needs to be looked at frommacro andmicro perspectives

The Fragile Balance of Trust by Tommaso Monacelli

Price stability depends on a collective persuasion: believing that money holds value. In an unstable world, inflation remains a central challenge that requires public awareness and sophisticated responses

Text:

Inflation is again at the center of economic debate, yet public understanding of it remains limited. A recent Italian survey showed that 40% of respondents are unsure whether a 1% interest rate on savings, with 2% inflation, leaves them better or worse off – a clear sign of confusion between real and nominal returns. The broader underlying issue is whether people truly understand what inflation is and what drives it.

What is inflation? Inflation is a sustained rise in the general price level. Beneath this simple definition, however, lies a complex set of mechanisms. Four broad frameworks help explain its dynamics.

Monetary inflation. Rooted in Milton Friedman's dictum that inflation is "always and everywhere a monetary phenomenon," the monetary view emphasizes how the quantity of money in circulation drives inflation. For the sake of argument, consider the following thought experiment: what if money in large quantity were dropped from helicopters? This idea – popularized as "helicopter money" – reflects a widespread belief that simply expanding the availability of money could solve deeper economic pathologies. The flawed logic suggests that printing money is costless, especially in digital form, so why not credit everyone with a lot of euros and address issues such as poverty or unemployment?

Economic theory suggests that the effects of a helicopter drop of money crucially depend on expectations. Suppose that the authorities unexpectedly announced, in the morning, a helicopter money drop – €1,000 per person – making it clear that this is a purely one-off experiment. Precisely because the experiment is limited to a single occurrence, by construction it cannot have a large impact. It is a bit like throwing newspaper into a fire. Assuming that consumer prices remain unchanged, and that all of this additional money is spent, we would observe a purely temporary spike in consumption. But a spike nonetheless – and only under the crucial assumption of constant prices and a high propensity to spend. Certainly not a solution to an economic crisis.

Now suppose, alternatively, that the authorities announced helicopter money as a permanent policy. Every morning, in a fully predictable manner, helicopters fly and increase the money supply by 5% compared to the previous day. If you were a shopkeeper or an entrepreneur, what would you do in this scenario? Before going to bed, you would press a button on your computer and program a 5% price increase for the next day. It is much easier to make a profit this way than by increasing production. We can conclude that if money is permanently dropped from helicopters, it will simply lead to higher prices (i.e. inflation), leaving individuals' purchasing power unchanged and having zero effect on consumption.

A real-world example occurred in 2020 when the Hong Kong government, facing a consumption slump, transferred $1,200 to every adult. That was effectively a "helicopter

money" experiment. Some hailed it as a miracle cure for recessions, assuming people's purchasing power would rise – if prices stayed fixed. But precisely that assumption is key: if prices rise (i.e. inflation), the real benefit of helicopter money completely vanishes.

The likely ineffectiveness of the helicopter money experiment, then, leaves us with the following question. If, in the end, something must fall from the sky in abundance, would you rather it be money – or chocolate?

Real inflation. In reality, and differently from the helicopter money example, prices adjust only gradually, due to various nominal rigidities. Two forces can drive inflation in this context. First, firms may raise markups in response to supply shocks (e.g. higher price of energy) or rising costs, passing these on as higher consumer prices. Second, and more subtly, inflation can emerge from expectations: if agents anticipate future price increases, they change their behavior today.

This is especially evident in wage negotiations. Since wage contracts are infrequent, workers anticipating higher inflation will demand higher nominal wages to protect purchasing power. These wage increases raise production costs, prompting firms to raise prices. Expectations thus become self-fulfilling: inflation today is shaped by beliefs about tomorrow. This is why central banks put great emphasis on keeping inflation expectations anchored.

Fiscal inflation. Price stability is not achieved by central banks alone, but through cooperation between monetary and fiscal authorities. While central banks control inflation via interest rates, their efforts can be undermined if fiscal policy lacks credibility. If public debt is seen as unsustainable, markets may doubt the government's ability to maintain fiscal discipline, weakening the impact of monetary tightening. A vicious cycle can then follow: higher rates may slow the economy or cause a recession, worsening the debt-to-GDP ratio and increasing debt service costs. Even independent central banks can be constrained by irresponsible fiscal behavior. Ultimately, monetary policy depends on public confidence in future fiscal adjustment. Without credible fiscal backing, controlling inflation becomes much harder. Latin America's economic history is marked precisely by chronic inflation driven by fiscal imbalances.

Inflation and conflict. Inflation can also stem from an underlying distributional conflict. A shock – like a spike in energy prices – can provoke opposing reactions in the labor market: firms raise prices to protect margins, while workers demand higher wages to preserve purchasing power. This triggers a wage-price spiral that satisfies neither side. The result is a dysfunctional equilibrium, like a crowd at a football match: everyone stands up to see better, but no one gains, and all are worse off. In such cases, one crude way to make people sit down is to make the match less appealing – a clearly suboptimal solution. Yet this is often what central banks do: they cool the economy by raising interest rates in order to tame inflation, while still risking a recession. A better outcome would be a cooperative equilibrium – an "incomes policy" – where wages and prices are moderated through coordinated agreements between employers and workers. Unfortunately, such coordination is politically and institutionally hard to achieve, and rarely implemented.

Inflation is a complex phenomenon – technically intricate, yet deeply felt in everyday life. While its underlying causes are often poorly understood by the general public, inflation invariably becomes salient when it surges. The electoral cycles of 2021–2023, particularly in the United States, made this clear: once inflation materializes, it rapidly becomes the dominant public concern, shaping both political discourse and voter behavior. This highlights not only the real-world relevance of inflation, but also the pressing need to deepen economic and financial literacy. Looking ahead, mounting geopolitical risks, the disruptive effects of climate change, and the rise of protectionist policies are poised to strengthen the structural drivers of inflation. These forces will cement inflation's role as

a central macroeconomic challenge in the years to come – demanding both an informed public debate and sophisticated policy responses.

When the Cure Fuels the Symptoms by Barbara Orlando

According to Alessia De Stefani, Economist at the IMF and Bocconi alumna, rising interest rates can unexpectedly push up housing costs, worsening the burden on renters

Text

When central banks raise interest rates to cool down the economy, the goal is to ease price pressures. But in the housing market, the outcome can be the opposite. “In many cities, higher rates have priced potential buyers out of the market, forcing them to remain renters. This increased demand has pushed rents up, making life harder for both new and existing tenants,” explains Alessia De Stefani, Economist in the Macro-Financial Division of the IMF’s Research Department. This paradox highlights just how complex the relationship is between monetary policy and real estate dynamics.

In your paper “Missing Home-Buyers and Rent Inflation”, you show how higher interest rates can push people out of the housing market and drive up rents. Can you explain how this dynamic works?

When interest rates rise, like in recent years, the monthly cost of a home loan goes up. For many people, especially renters buying a home for the first time, this increase in mortgage costs made it impossible to obtain a home loan. As these would-be buyers could not buy, they stayed in the rental market instead, increasing competition and shrinking the pool of available apartments and houses for rent, driving up rent prices. In cities where a lot of first-time buyers were priced out, rent increases have been especially sharp. In brief, higher interest rates push some people out of buying homes, so they compete for rentals instead. This extra pressure on the rental market drives rents up, making life harder for both new and existing renters.

Raising interest rates is supposed to cool demand and bring inflation down. But in the rental market, the opposite seems to happen. What risks does this pose for central banks?

A key implication of this analysis – though I want to stress that these are personal opinions based on my ongoing research, and in no way reflect the opinions of the IMF – is that tightening monetary policy may inadvertently increase headline inflation, at least in the short run. This is because rents and owner-equivalent rents account for a large share of the overall CPI basket in the US, as well as in many other advanced economies. Hence rising rent prices can have large consequences for headline inflation. It is important to stress that in the long run, these effects should dissipate, as rental supply should adjust to the increase in rental demand. In last couple of years, a fairly large increase has been seen in rental unit development and conversions across US cities, just as rental prices surged.

In countries where most mortgages are fixed-rate, the transmission of monetary policy is weaker. How does the structure of mortgage markets shape the impact of rate hikes on inflation?

There is a large body of evidence showing that the structure of domestic mortgage and housing markets matters for the speed and strength of monetary policy transmission. This literature shows how, for example, higher homeownership rates and household indebtedness make households more sensitive to changes in interest rates, thus helping the transmission of monetary policy. The composition of the domestic mortgage markets matters, too. A large prevalence of fixed rate mortgages shields consumers from interest rate hikes, because homeowners with FRMs do not “feel the pinch” of rising interest rates

in their monthly mortgage payments. In recent work, my colleagues and I show that this is a key factor determining the strength of monetary policy transmission to household consumption, both across countries and over time.

Inflation is not just unequal across income groups, it also varies across regions. What do we know about how inflation, especially in housing, differs between urban and rural areas?

Generally, house prices in urban areas tend to be more volatile and responsive to changes in credit conditions than in rural areas. One mechanism underlying this difference is cities' more inelastic housing supply: it is harder to build in urban areas than in rural ones, due to regulation, land-use restrictions and geographic constraints. This means that when mortgage rates decline and housing demand increases, for example, housing supply in these areas may not be able to catch up quickly enough, pushing up house prices more. Regions which appreciated the most during a boom are also more vulnerable to sharper corrections, once the tide turns. Housing supply restrictions can also generate sharper rent price increases in urban areas during a tightening cycle, as discussed above. Another mechanism at play is the greater reliance of homebuyers on mortgages in cities, in part because housing is generally less affordable than in rural areas. This makes home purchasing activity (and house prices) more sensitive to fluctuations in interest rates and the business cycle more generally.

How do buyers and investors in the housing market form their inflation expectations – and can these expectations themselves fuel price dynamics?

By now, there is a large body of empirical and theoretical evidence showing that people form house price expectations by extrapolating from recent and personal experiences, compared to other sources of information. This means, for example, that when people observe house prices increasing for a long period of time, they tend to become very optimistic about future price growth and to discount the possibility that the housing market could ever turn. This dynamic can indeed sometimes contribute to speculative dynamics and fuel house price growth, particularly when the share of housing investors (who buy in expectation of higher future returns) increases. This mechanism can in some circumstances feed boom-bust patterns in housing markets, because areas where prices increase excessively beyond fundamental values tend also to experience the sharpest corrections, ex-post.

What Lit the Fuse? By Vittorio Schivazappa and Antonella Trigari

A study reconstructs three alternative scenarios to explain the relationship between the labor market and the post-Covid inflationary surge, exploring the effects of supply, demand and expectations

Text:

After two decades of low and stable inflation around 2%, the post-Covid recovery triggered an inflationary surge not seen since the 1970s. Inflation peaked at 9.1% in the United States (June 2022) and nearly 11% in the euro area (October 2022), before gradually returning toward target levels by late 2023.

From the outset, labor market dynamics played a central role in both policy and academic debates. Was this inflationary spike driven by labor market tightness – and if so, which mechanisms were at play? Or did rising inflation itself shape the evolution of the labor market?

At the heart of these questions lies labor market tightness, typically measured by the ratio of job vacancies to unemployed individuals (the V/U ratio). This indicator underpins two

foundational macroeconomic relationships. The Beveridge curve captures the inverse link between unemployment and vacancies: during expansions, firms post more vacancies to meet growing demand, reducing unemployment and raising tightness. The Phillips curve, in contrast, links tightness to inflation: as demand increases and labor markets tighten, firms must offer higher wages to attract workers – raising labor costs and, ultimately, prices.

Both curves can shift due to supply-side or structural factors. For instance, if vacancies become harder to fill – due to skills mismatches, increased resignations or reduced labor force participation – tightness can rise even with stable unemployment. Similarly, inflation may increase for a given level of tightness if supply disruptions push up costs.

Within this framework, three competing narratives have emerged to explain the link between inflation and labor market conditions.

From supply shocks to tightness

Inflation initially surged due to a confluence of shocks: supply chain disruptions, a shift in consumer spending from services to goods, the reopening of economies after pandemic lockdowns and large-scale fiscal stimulus. These forces simultaneously strained supply and boosted demand, creating sharp imbalances. Central to this narrative is the view that supply-side pressures – particularly sector-specific bottlenecks – were the initial trigger. Prices rose markedly in key sectors without offsetting declines elsewhere, driving up aggregate inflation and shifting the Phillips curve upward.

As the recovery gathered pace, aggregate demand continued to strengthen, prompting firms to expand hiring. Vacancy postings surged, increasing labor market tightness and exerting further upward pressure on wages and prices along the Phillips curve. On the Beveridge curve, rising vacancies reduced unemployment.

But the labor market was still coping with the effects from the pandemic: job matching became more difficult as many workers had exited the labor force or were reluctant to return to pre-pandemic jobs that they no longer found attractive. As a result, firms had to post more vacancies to achieve the same level of unemployment, effectively shifting the Beveridge curve outward. The result was a labor market characterized by persistently high tightness, even as unemployment remained relatively stable.

Tightness caused inflation

This second view holds that labor market tightness was the primary driver of inflation from the outset. It challenges the then-prevailing notion of a flat Phillips curve – namely, the idea that tight labor markets had little influence on inflation. Instead, it contends that when tightness reaches exceptionally high levels, its inflationary effects reassert themselves, effectively steepening the Phillips curve.

According to this perspective, the post-pandemic surge in demand – driven by reopenings and unprecedented fiscal packages – led to acute labor shortages. Firms, unable to expand output sufficiently, responded by raising wages more aggressively than in normal times and passed the resulting cost increases on to consumers. In this interpretation, tightness re-emerged as a powerful inflationary force, reviving the tightness–inflation link and amplifying the effects of ongoing supply shocks.

Inflation caused tightness

A third view turns the story on its head: it was not labor market tightness that caused inflation, but rather inflation that fueled labor market tightness. In this narrative, the elevated V/U ratio – typically a signal of strong labor demand – may instead reflect how workers responded to rising prices.

Initially, many workers tolerated higher inflation due to the frictions and costs associated with renegotiating wages or changing jobs. But as inflation persisted, a growing number began to seek better-paying jobs or push for higher wages. Survey evidence confirms that workers actively responded – particularly through on-the-job search – to protect their purchasing power. Notably, the wage growth gap between job movers and job stayers widened significantly during this period, making job switching especially attractive.

This surge in on-the-job search led firms to post more vacancies aimed at attracting already-employed workers. As a result, vacancy rates rose without necessarily reducing unemployment – effectively shifting the Beveridge curve outward. From this perspective, inflation created the illusion of a tight labor market – raising the V/U ratio without actual overheating.

The labor market has been central to understanding the causes and dynamics of the 2021–2023 inflation surge. While macroeconomic indicators have supported divergent narratives, micro-level data – particularly on the wage behavior of job switchers versus stayers – offer a sharper lens for identifying the forces at play. As new data continue to emerge, our understanding of the tightness–inflation relationship will no doubt evolve – possibly leading to significantly different policy implications.

Services Under Pressure by Barbara Orlando

In the new European scenario, domestic demand is driving price increases in services, making monetary policy actions more challenging

Text:

In recent years, inflation has reclaimed center stage in the economic debate. But behind the headline numbers lies a divergence between goods and services, with major implications for monetary policy. “Today, it’s services – driven by wages and domestic demand – that are sustaining inflation in Europe,” explains Mario Porqueddu, Bocconi alumnus and Senior Economist at the European Central Bank. Understanding these sectoral dynamics is crucial for central banks aiming to respond effectively in an increasingly uncertain environment.

In your recent piece for the ECB Economic Bulletin, you explored the divergence between goods and services inflation. Why is it important to distinguish between the two? And what do these trends reveal about how the economy works?
The ECB’s primary objective is price stability measured in terms of total inflation. Yet trends in relative prices are informative for the likely persistence of a shock and for gauging the impact of secular forces on inflation. The gap between services and non-energy industrial goods (NEIG) inflation varies over time, but it had remained positive for a long period until the 2021-2022 inflation surge. Prices of goods are influenced more by global production and trade conditions and the manufacturing sector has seen a superior productivity performance compared to services, which can explain part of these pre-pandemic trends in relative prices. These dynamics reveal that the economy reacts differently to global versus domestic shocks, with services inflation showing greater persistence due to its dependence on wages and domestic demand.

What are the main factors explaining the differing behavior of goods and services inflation? Energy, wages, domestic demand: what plays the biggest role today?
Goods inflation is historically driven to a large extent by energy prices, global supply chains and external factors compared to services. The box highlights that supply-side shocks (e.g. energy prices, supply chain disruptions) had a stronger, quicker, but less persistent effect on NEIG inflation in 2022 and 2023. On the other end, services inflation is driven more by

labor market dynamics (e.g. strong wage pressures) and domestic demand. While goods inflation came down strongly due to fading of supply shocks, services inflation has been more persistent due to persistent wage pressures and tight labor markets. Thus, services inflation, driven by domestic factors, plays a bigger role in overall inflation today compared to goods.

Are the differences we are seeing between goods and services temporary, linked to recent shocks, or do they signal a more structural change in inflation dynamics?
The divergence between goods and services inflation is influenced by both temporary shocks and potential structural changes. Pandemic-related disruptions and energy price surges caused a temporary reversal of the usual positive gap between services and goods inflation. The positive inflation gap between services and goods is returning to its historical level, but demographic trends (e.g. aging), technological advancements (e.g. AI), and deglobalization could lead to structural shifts in relative prices. Labor-intensive services may face continued upward price pressures. Goods inflation could also increase with a possible deglobalization due to geopolitical and trade fragmentation. Digitalization and developments in artificial intelligence (AI) could affect services and goods prices differently. The size of the overall effect remains uncertain and depends on how quickly these technologies are adopted in the production process.

Over the past three years, inflation has returned forcefully to the center of economic debate. A temporary spike was expected, but services inflation seems more persistent. Is this an anomaly or a warning sign?
While goods inflation has normalized following the unwinding of supply shocks, services inflation was slower to come down, due to still strong wage pressures and labor market tightness. According to the June 2025 Eurosystem projections, services inflation is expected to decline gradually, reflecting the fact that the delayed adjustments to earlier general price increases are fading out and the moderation in labor cost pressures is feeding through.

How does the ECB's work change when inflation is not homogeneous but scattered across sectors? Does it make monetary policy calibration more difficult?
An in-depth understanding of the drivers of the prices of different types of goods and services is paramount. Goods inflation responds more quickly to external shocks and policy measures, while services inflation is more persistent due to its reliance on wages and domestic demand. This heterogeneity requires a careful monitoring of sectoral dynamics.

For many people, headline inflation figures often feel disconnected from daily life. Can the difference between goods and services inflation help explain this gap?
The public's perceptions of inflation are influenced by the prices of frequently purchased items. In particular, energy and food tend to dominate the public's perception on inflation because they are purchased more frequently and are more visible to consumers.

Expectations play a crucial role in how monetary policy is transmitted. How are inflation expectations formed today, and how responsive are they to ECB communication?
The drivers of expectations vary depending on the time horizon for which they are formed. Short-term expectations are more sensitive to past inflation shocks, while long-term expectations are more linked to the central bank's inflation target. Long-term expectations in the euro area remained anchored during the 2021-2022 inflation surge, reflecting confidence in the ECB's ability to manage inflation.

After years of low and stable inflation, are we entering a period of greater price volatility? Is this a plausible long-term scenario?
Inflation volatility increased in the post-pandemic period due to unprecedented shocks. Looking forward it could increase again due to heightened uncertainty.

Finally, what lessons have we learned from this period of inflationary turbulence? And what tools should be strengthened to better manage such challenges in the future?
As President Lagarde said during her speech at the "ECB and Its Watchers" conference in March, the new environment we are in raises fundamental questions for monetary policy, which are being examined as part of the ongoing strategy assessment. The recent period of inflationary turbulence has underscored the importance of maintaining well-anchored inflation expectations, as they enable central banks to manage inflation with lower economic costs. It has also highlighted the need for a state-dependent reaction function that adapts flexibly to the size, persistence and nature of shocks, particularly in a world with supply shocks and geopolitical uncertainties. To better manage future challenges, policymakers should strengthen tools for scenario analysis, closely monitor inflation expectations and maintain a robust yet agile framework for achieving price stability over the medium term. Ultimately, the commitment to price stability, combined with agility and clarity, will be central to navigating an increasingly volatile global environment.

Rising Prices Are a State of Mind by Dmitriy Sergeyev

The impact of inflation goes beyond the numbers. Between stressful wage negotiations, growing distrust and "shoe-leather costs," economics runs up against psychology

Text:

Between January 2021 and January 2023, consumer prices jumped by more than 10% across advanced economies – far above the usual 4% two-year increase. In Italy prices rose 15.4%, in the euro area 14.1%, and in the United States 14.4%.

During this period, the concerns about inflation rose to be the number one factor in people's lives. For example, in the US, these concerns significantly surpassed the affordability of health care, gun violence, climate change and illegal immigration. Not surprisingly, many analysts even argue that this surge in prices was a decisive factor in the outcome of the 2024 US presidential race.

What are the costs of inflation? Any student who has taken an introductory macroeconomics course is familiar with the standard answers. From the perspective of firms, inflation forces businesses to update their prices regularly, giving rise to so-called menu costs. For households, inflation eats away at the purchasing power of cash, so people keep minimal money on hand. That forces more frequent trips to ATMs or banks – what economists call shoe-leather costs – resulting in higher transaction costs.

Economists stress both the costs and the benefits of moderate inflation. For example, in post-World War II data, higher inflation is associated with higher overall growth in advanced countries, which is often rationalized through the Phillips curve, representing a negative trade-off between unemployment and inflation. Additionally, moderate positive inflation helps minimize the chances that a country will be caught in a deadly deflationary spiral, where overall growth and consumer prices fall rapidly.

Do non-economists perceive the same effects of inflation as economists? In a famous 1997 study, Nobel laureate Robert Shiller took an unconventional approach by the standards of academic economists at that time. He asked people directly why they dislike inflation so much. He surveyed a representative sample of US, German and Brazilian households about their perceptions of the costs of inflation. Among many findings, Shiller demonstrated that

people perceived prices to be growing faster than nominal earnings, thereby eroding the purchasing power of their earnings.

One reason individuals feel their wages lag (even when data show they do not) could be that wages do not automatically increase with inflation. Workers must act proactively by asking employers for higher nominal wages, which may lead to conflicts with their bosses. Not everyone is a natural negotiator. Most people are averse to conflict situations, such as wage bargaining. Even if, ultimately, most workers manage to get wage rises, it is psychologically costly. Recent research by Joao Guerreiro (UCLA), Jonathon Hazell (LSE), Chen Lian (UC Berkeley) and Christina Patterson (Chicago Booth) measured these costs and found them to be pretty significant. Thus, a simple textbook logic that nominal wages keep up with price level increases implies that inflation's costs are negligible is misleading, because workers must incur psychological and bargaining costs to secure higher wages.

Stefanie Stantcheva (Harvard University) recently repeated and expanded Shiller's original survey. Having confirmed Shiller's findings that people hate inflation, she discovered new insights. For example, the respondents did not perceive any positive aspects of inflation, including higher overall growth.

Economists are still grappling with why most people fail to see any upside to inflation. One compelling theory comes from Rupal Kamdar (Indiana University, Bloomington) and Walker Ray (Chicago Fed), who show that individuals tend to notice price rises most acutely when they coincide with supply-side shocks – like spikes in energy or food costs – that also depress overall growth. In those episodes, higher inflation feels like bad news on two fronts, reinforcing the belief that rising prices inevitably go hand in hand with economic pain. That association leaves little room in the public mind for the idea that moderate inflation, at other times, might be associated with higher overall growth.

Understanding these subjective and psychological dimensions of inflation is not just an academic exercise – it is essential for policymakers seeking to design effective policies that ease the daily burden of rising prices and maintain public trust in government.

Rising Rates? Companies with Floating-Rate Loans Raise Their Prices

A new study reveals how floating-rate loans may have weakened the effectiveness of the ECB's monetary tightening: to defend their profit margins, companies pass higher borrowing costs onto consumers

Text:

In 2022, the European Central Bank (ECB) hiked rates aggressively. Within a few months, the deposit facility rate jumped from -0.5% to 4% in an effort to bring runaway inflation - above 10% in several Eurozone countries - back under control. Yet, in many sectors, prices remained surprisingly sticky. Why?

A potential answer comes from the paper Inflation and floating-rate loans: evidence from the euro area, authored by Fabrizio Core (Luiss), Filippo De Marco (Bocconi), Tim Eisert (Nova School of Business and Economics), and Glenn Schepens (European Central Bank), and published in the ECB's Working Paper Series. The study sheds light on a mechanism long overlooked in macroeconomic models: the transmission of monetary policy may stall when companies are exposed to floating-rate loans.

"Companies with floating-rate debt don't cut prices after a rate hike," explains Filippo De Marco, Associate Professor of Finance, "on the contrary, they may even increase them to offset the rise in debt costs." A rational response - yet one that undermines the ECB's core objective: cooling demand and therefore prices.

The core of the study

To reach this conclusion, the authors merged three massive datasets: AnaCredit (the European credit registry tracking all loans above €25,000), Eurostat's sector-level inflation data (CPI), and - perhaps most revealing - scanner data on over 270,000 individual supermarket products sold in Italy, Germany, and France between 2020 and 2023. The finding? The impact of rate hikes on prices varies significantly depending on the structure of a firm's loans. On average, a 1-percentage point increase in ECB interest rates causes a 0.51% price drop among companies with fixed-rate debt. But for companies with floating-rate loans, the price drop is just 0.23% - less than half.

A shelf-level example

Take yogurt, for example. If "Brand X" yogurt is produced by a firm with fixed-rate loans, its price is likely to fall when rates rise. But if "Brand Y" yogurt - identical in category and type - is made by a firm with floating-rate debt, its price might hold steady or even go up. The difference lies not in the product or consumer, but in the firm's financial structure. "This isn't just a statistical anomaly," De Marco notes, "but a structural mechanism. If your funding costs suddenly rise and you have some market power, you raise prices to protect your cash flow."

The Italian case

The phenomenon is particularly relevant for Italy, where around 60% of corporate loans are floating-rate. In contrast, most business lending in Germany and France is fixed-rate (over 70%). This divergence has big implications. The researchers estimate that if all euro-area firms had had the same exposure to fixed-rate loans as those in France, Germany, and Belgium, inflation in 2022–2023 would have been 0.8 percentage points lower. "That's a difference that could have significantly sped up the return to the 2% inflation target," De Marco comments.

When market power matters

The paper also shows that not all firms with floating-rate loans can raise prices. Only those with substantial "customer capital" - a loyal, price-insensitive consumer base - are able to pass on cost increases without losing market share. In more competitive markets, by contrast, companies cannot afford to hike prices without being immediately undercut by more aggressive rivals.

Side effects: renegotiations and margins

Another key insight concerns firms' financial behavior. After rate hikes, companies with floating-rate loans were more likely to renegotiate their terms, seeking lower spreads or switching to fixed-rate contracts. But such adjustments happen after the fact - once higher interest payments are already hitting the bottom line. Moreover, while the operating margin (EBIT/sales) increased for floating-rate firms, their return on assets (ROA) did not - indicating that price hikes were used mainly to cover rising costs, not to boost profits. In other words: no "greedflation," just financial survival.

Implications for central banks

The study's message is clear: monetary policy is not neutral with respect to corporate debt structure. In a system where many firms borrow at floating rates, their short-term response to rising interest rates may actually fuel inflation instead of cooling it. To strengthen the transmission of monetary policy, one option is to encourage the uptake of fixed-rate debt. Another is to promote market competition: in truly competitive markets, even indebted firms can't raise prices. "A more explicit focus on corporate loan structures should be on central banks' radar," De Marco concludes. "Because in a world where inflation is back, even the fine print of credit contracts matters."

Box: The paper

3 and Floating-rate Loans: Evidence from the Euroarea, by Fabrizio Core, Filippo De Marco, Tim Eisert and Glenn Schepens

Rights

The Laws of AI Security by Arianna Vedaschi, Chiara Graziani

In countering terrorism, artificial intelligence shifts the balance between public and private. But without effective governance, rights and the rule of law could lose out

Text:

As with every aspect of our lives, the field of national security is increasingly affected by technology, including artificial intelligence (AI). Although the assumption that technology per se is neutral – neither 'good' nor 'evil' – is particularly true in the field of security, the sensitive nature of security matters calls for close attention to the impact of these technologies on the legal protection of rights and freedoms and, ultimately, on the basic features of the rule of law.

We address the legal consequences of advanced technology in national security from two main angles: on one side, technology is a powerful tool in the hands of terrorists, exploited by them and their organizations to serve their criminal purposes; on the other, it is an essential ally for public authorities – and for other actors cooperating with them – in preventing and countering terrorism. Examining these two sides in parallel is crucial to get a full understanding of the bright and the dark sides of technology.

With this in mind and through a comparative lens, we reflect on what law – i.e. legal regulation – can or cannot (and should or should not) do, what its potentialities and its limits are, and how it has to interact with entities different from traditional regulatory bodies (public authorities), such as internet platforms and the so-called giants of technology or big techs.

Regarding the rights-security relationship, we point out that it is increasingly becoming a matter of private actors, thus losing its traditional connection with sovereignty and the public sphere. This is far from being a merely theoretical issue, since private bodies follow a totally different pattern from public authorities; specifically, they are driven by market and competition issues, which may distort, or at least change, the modus operandi when it comes to balancing security with rights.

Concerning regulatory aspects, it is well-known that several postures exist, from attempts to omnibus regulation centered on rights, as in the European Union (EU) with the recent AI Act, up to US deregulation, and to Chinese state-centric vision. All of these approaches, derived from varied legal cultures and political choices, share the same drawbacks, i.e. they do not lay down clear rules or at least principles for cases where AI is pivotal for security purposes. This is why we suggest a more sectorial approach, with some sort of lex specialis for advanced technology in counter-terrorism. It should not however leave big techs behind, who cannot be the leaders in regulating AI and security, but rather are key actors within a balanced and realistic framework. We highlight that some hints towards these goals have been made – e.g. within the EU – but the effort could be improved.

Coming to geopolitical considerations, different stances on how to regulate technology, rights and security in different parts of the world led to the fight for predominance in the field. The EU has tried to gain leadership through the so-called Brussels effect, which however is likely to be down-sized, given the recent events where private powers have shown an increasingly important role, especially in some areas of the world.

Against this background, it is difficult to foresee a 'winning model' in handling technology, security and rights, as this is strictly connected with actors' political power as well as the socioeconomic context. However, we argue in favor of an approach that maximizes the

protection of rights globally, instead of only embracing a market leadership, thus keeping the rights-security relationship within the framework of the rule of law.

To boost this challenging process, we lay down some suggestions. For instance, discussion among representatives of the EU and third countries might foster a cultural change towards better extra-EU standards. In parallel, the introduction of incentives such as tax relief for companies providing their services within the EU – alongside the requirement to comply with its rights-protecting legislation – could compensate the costs of compliance, which might otherwise make the EU market increasingly unattractive to companies from third countries.

In short, the ultimate goal should be to prevent any struggles for unilateral leadership, in favor of a well-balanced governance approach, that takes into account all the stakeholders involved.

Box: The book

"Artificial Intelligence, Counter-Terrorism and the Rule of Law" (Edward Edgar Publishing, 2025, open access) examines the use of advanced technology, specifically artificial intelligence (AI), both as a tool in the hands of terrorists and as a powerful security counter-measure. It sheds light on the legal issues arising from the presence of AI in national security matters and identifies how AI can be regulated in this sensitive field.

Box: The book

In their essay *"Intelligenza artificiale e democrazia"* (Egea, 2024, 240 pages, €29.90, in Italian), Oreste Pollicino and Pietro Dunn explore the relationship between emerging technologies and democratic values, focusing on two critical areas: the fight against disinformation and the protection of pluralism and the principle of equality in the face of algorithmic discrimination.

Cover story

Climate Change and the Financial Equation

Global warming puts insurance firms, banks and financial investors under pressure. From the insurance protection gap to the new ESG rules, finance is called to deal with a climate risk it can no longer ignore

The Climate Waits for No One by Matteo Di Castelnuovo

Global warming is accelerating beyond predicted thresholds: promises and plans are no longer enough. Already-available concrete solutions and immediate actions are needed to avoid the worst impacts

Text:

First of all, the overwhelming majority of scientists claims that climate change is caused by greenhouse gas emissions, about three-quarters of which consists of carbon dioxide. The same scientists also tell us that over the past 170 years, human activities have increased the concentration of CO_2 in the atmosphere by 47% compared to pre-industrial levels observed in 1850. The World Meteorological Organization estimated that carbon dioxide is accumulating faster than at any time in human history, with concentrations having risen by more than 10% in just two decades. Planet-heating pollutants in atmosphere hit record levels in 2024: 430 ppm for CO2, which is getting dangerously close to 450ppm. The latter is the widely accepted benchmark for limiting warming to a manageable level, because exceeding it is believed to significantly increase the likelihood of severe and potentially irreversible climate impacts, such as rising sea levels, extreme weather events and disruptions to global food supplies.

The level of pollution is 51% greater than before the Industrial Revolution, when people began to burn large amounts of coal, oil and fossil gas. CO_2 concentration in the atmosphere is rising mainly due to the use of fossil fuels – such as gas, oil and coal – for energy uses. In fact, over two-thirds of greenhouse gas emissions stem from energy production and consumption. That is why it is so crucial to focus on all those sectors, such as energy and transportation, that rely heavily on fossil fuels. Moreover, we know that for over a decade, the transport sector – especially road transport – has been the leading source of greenhouse gases in advanced economies like the United States, the European Union and the United Kingdom.

While natural variability plays some part, the scientific evidence clearly indicates that human activities (especially emissions of heat-trapping GHGs) are mostly responsible for making our planet warmer: air temperatures on Earth have been rising since the Industrial Revolution. Indeed, according to NASA, the average global temperature on the planet has increased by at least 1.1° C (1.9° F) since 1880. The last 10 years have been the warmest 10 years on record. The majority of the warming has occurred since 1975, at a rate of about 0.15-0.20 ° C per decade. Global surface temperatures set a new record in 2024, surpassing the record set in 2023. It was unambiguously the warmest year since records began in the mid-1800s. 2024 was by far warmer than any year prior to 2023. 2024 also became the first year with an average temperature clearly exceeding 1.5° C above the pre-industrial level, i.e. the threshold set by the Paris Agreement to significantly reduce the risks and impacts of climate change.

This bad news notwithstanding, there are good reasons to be optimistic. First of all, more and more companies across different sectors – pressured by both investors and consumers – have begun a genuine “green” transition, adopting behaviors and

technologies aimed at reducing greenhouse gas emissions. Another encouraging sign is that we already know which technological and economic solutions are needed to slow and mitigate the most dramatic effects of climate change. Consider the use of renewable energy sources and electric vehicles on the one hand, and carbon pricing or incentives for low-emission technologies on the other.

Both factors, coupled with targeted climate policies, have already had an impact on the economy. Indeed, economic growth has been closely tied to a rise in GHG emissions through most of modern economic history. However, with steady improvements in the energy intensity of economic growth (i.e. less energy is required to produce an additional unit of global GDP) and, more recently, a dramatic rise in clean energy deployment, there has been a growing divergence between GDP growth and CO_2 emissions in most economies around the world. In advanced economies, continued growth in GDP has been accompanied by a peak in CO_2 emissions in 2007, followed by a decline. In many emerging and developing economies, the trajectories of CO_2 emissions and GDP growth have also started to diverge.

In this respect, the European Union has long been a leader in climate issues, achieving remarkable goals: today, 47% of Europe's electricity is produced from renewable energy.

However, no climate and energy policy will be sufficient unless supported by consistent actions and behaviors from businesses and citizens alike, because empirical evidence (e.g. rising average temperatures) shows us that climate change has already been underway for some time – and, unfortunately, some of its effects are irreversible. We still have time, though relatively little, to slow down climate change and prevent its most dramatic consequences. Because we must – and can – change now, if we want to limit the worst impacts of climate change across the world in the coming decades.

Underwriting Climate Insurance by Patrizia Contaldo

A study by the Bocconi Baffi Center's INSURET Observatory says the insurance industry is called on to provide additional coverage against climate risk – with index-based insurance policies and other products – to protect Italian firms and territories from the consequences of catastrophic events

Text:

Damages paid by insurance companies to cover catastrophic damage amounted to $140 billion in 2024. The recent acceleration of climate change highlights the role of the insurance industry. Companies are revising their business models to integrate ESG criteria into their processes, products and services for consumers and businesses, with the aim of contributing to the transition to a more sustainable and resilient economy.

The challenge is to manage the risks associated with climate change, promote responsible behavior, create a positive impact on society and the environment, in an evolving regulatory framework that foresees stringent financial disclosure and reporting obligations.

As the industry waits for the Omnibus I package with new regulatory proposals from the European Commission aimed at simplifying legislation, insurance companies are operating as institutional investors with investment strategies that are more attentive to sustainability profiles, contributing to the transition to a low-carbon economy. Research by the Bocconi Baffi Research Center's INSURET Observatory shows a 20% reduction in premium collection for insurance companies that invest in the coal sector.

At the same time, firms are integrating ESG criteria into their insurance product portfolios with the creation of new life insurance solutions, with a financial component that focuses on investments with sustainability characteristics to meet the interests of "impact-first"

investors, who are ready to accept lower returns if the assets in question have a positive environmental or social impact.

More recent is the offer of services for the prevention of climate risks and insurance products that encourage a more careful use of resources, such as home insurance policies with efficient consumption – leading to lower premiums – or pay-as-you-pollute car insurance. The 16% increase in premium collection for these products reveals a target of "sustainable" customers and a role for the industry in "educating for sustainability". However, ANIA, the Italian insurance industry association, highlights so-called "greenhushing" going on in some companies, which would rather not communicate their sustainability initiatives for fear of being accused of greenwashing due to regulatory complexities involved.

The role of the insurance industry is not limited to the retail segment; in fact, from this year, companies are required by the legislator to submit offers to provide coverage for the assets of many Italian companies as well as those that have a permanent establishment in the country. The 2024 Budget Law (no. 213/2023) introduces the obligation for private companies to buy insurance against catastrophic risks, such as earthquakes, floods, inundations and landslides.

It is complex to structure offers that can suit the industry makeup of the Italian economy distributed across territories with dissimilar characteristics and equally peculiar activities. You need to have specialized skills, rely on technological innovation and build a distribution network that that can act as a risk manager for SMEs.

Public-private complementarity is the most suitable choice when it comes to the climate. In the case of micro and small enterprises, examples implemented in rural economies can be replicated, such as the "Global Index Insurance Facility" program, promoted by the World Bank for the development of index-based insurance selling in developing countries. This way, millions of farmers in Africa, Asia and Latin America have had access to insurance solutions that would have otherwise been inaccessible to them.

The solution proposed in the Observatory's research study is to evaluate the hypothesis of a public-private integration that provides traditional and indexed insurance coverage. Parametric insurance with low amounts favors quick payouts in the event of a calamity and prevents damage from interruption of activity and loss of economic assets.

Sustainability is not just an environmental issue, it is also a matter of social sensibility and corporate governance. Making firms more attentive to and covered by climate risk represents a commitment to productivity, employment and worker wellbeing. And it is equally important to make customers more aware of climate change and the insurance products they buy, so it is also a question of language and communication.

When the Weather Moves Markets

According to a Bocconi study, extreme weather forecasts significantly affect the prices of natural gas futures. The paper reveals the existence of a real "climate risk premium" in financial markets, with returns above the S&P 500

At a time when the climate crisis imposes its agenda on both governments and businesses, finance is also beginning to deal with weather unpredictability. Extreme weather events – once exceptions, now increasingly the norm – not only impact daily life or the balance sheets of insurance companies, but are also beginning to affect financial markets. In particular, the US natural gas futures market, the NYMEX Henry Hub, is showing increasing sensitivity to weather forecasts, especially when they herald extreme cold or heat waves.

This is the topic at the heart of the study Can extreme weather forecasts lead to a risk premium? Evidence of a non-linear response in US natural gas futures, written by Stefano Caselli, Professor of Finance at Bocconi University and Dean of the SDA Bocconi School of Management, along with Manou Monteux, Maria Cristina Arcuri and Gino Gandolfi, all faculty at the University of Parma and affiliated with SDA Bocconi.

The study analyzes 30 years of data – from 1990 to 2019 – combining observed temperatures and short- and medium-term forecasts (up to two weeks), with the daily returns of natural gas futures contracts. The goal is ambitious: to understand if and how extreme weather forecasts can generate a risk premium, i.e. an additional return linked to the risk that operators take when betting on future price trends.

A premium for those who take risks with the weather

"Our research clearly shows that it is not observed temperatures that move gas prices, but extreme forecasts compared to seasonal averages," says Professor Caselli. "It's the discrepancy between what is expected and what is predicted, especially when you get out of the seasonal patterns, that triggers reactions in the markets."

The analysis is based on a complex architecture that distinguishes between "actual" and "predicted" temperatures, normalizing the data with respect to historical climatological averages. In operational terms, the authors tested a spread trading strategy, buying the contract with the closest expiry (NG1) and selling the contract with the next expiry (NG2), on days when forecasts indicate unusually cold weather (below the 10th percentile compared to normal). In winter, this configuration is associated with higher demand for gas for heating, which has a direct impact on prices in the short term.

The results are surprising: such a strategy would have produced, on average, a compound annual return (CAGR) of 12% over a 30-year period, far exceeding the return of the S&P 500 over the same period (7.6%). But even more significant is the risk/return ratio: the Sharpe ratio of the strategy linked to extreme weather forecasts is 1.3 – about three times that of the US stock index.

The extreme metric

The paper highlights an interesting dynamic: as the time horizon of the forecast increases (from one to two weeks) and as its "extremity" increases (i.e. how much it deviates from seasonal averages), the return that can be obtained from strategies based on this information also increases. It is a non-linear relationship, reflecting the inherent uncertainty of weather forecasts and the growing relevance of weather conditions for energy markets.

"Two-week forecasts are inherently more uncertain, but precisely for this reason they incorporate a higher premium," explains Caselli. "Those who bet on an incoming cold wave expose themselves to a double risk: the real weather and the one related to the accuracy of the forecast. The market recognizes and remunerates this risk."

And if it seems that all this depends on an imperfect efficiency of the market, the paper offers an answer: the observed temperatures – in themselves – do not generate significant movements in prices. It is only when forecasts are wrong compared to reality that prices adjust. This is a "Bayesian" behavior, as the authors define it, which confirms the efficiency of the market in processing the information available in advance.

Finance and climate change

The study is part of an emerging strand of climate finance, which studies how markets react to signals related to climate change. If extreme forecasts are increasingly frequent, also due to the alteration of atmospheric patterns, it is reasonable to expect that these effects will be amplified.

“Our analysis shows that climate change is not just an environmental issue, but is redefining pricing mechanisms in financial markets,” concludes Caselli. “Understanding these mechanisms is crucial for proper risk management, especially for anyone working in the energy sector.”

Box: The paper

Can Extreme Weather Forecasts Lead to a Risk Premium? Evidence of a Non-linear Response in U.S. Natural Gas Futures, by M.Monteux, MC Arcuri, G. Gandolfi and S. Caselli

AdaptAction: stepping into the future to act on the present by Diane Orze

An immersive and interactive experience designed to turn awareness into action: the launch of the AdaptAction project, which will debut at Meet Me Tonight 2025 and then continue online. A journey through future scenarios, everyday choices, and Bocconi-led scientific research

Text:

“What can I do?” It is this question - simple yet crucial - that sparks AdaptAction – Connecting Solutions for Climate Change, the new interactive outreach project developed by Bocconi University for Meet Me Tonight 2025 (26–27 September). More than just explaining climate change, AdaptAction invites visitors to become active players in the ecological transition, blending data, technology, imagination and research.

Created in collaboration with Logotel, the experience unfolds across both a physical and digital space, open to everyone–adults, teenagers and children alike. It offers a dynamic, 15–20 minute interactive journey between the user and the content. And the dedicated online platform will remain accessible after the event, keeping the public dialogue and engagement alive.

“With AdaptAction, we want to build a bridge between research and citizens. Science plays a fundamental role in helping society understand the complexity of climate change, but only if it can speak to people in a new, empathetic and engaging way. That’s our goal,” explains Elena Carletti, Dean for Research at Bocconi University.

Open-ended scenarios and climate profiles

At the heart of the project are 12 open-ended future scenarios, inspired by research carried out by Bocconi faculty in diverse but interconnected fields: urban studies, agriculture, international cooperation, environmental impacts. Each scenario involves a series of choices: as they respond, visitors shape their own “climate profile” – Change Champion, Sustainable Realist, Informed Analyst or Everyday Guardian – reflecting their awareness and action-oriented mindset on environmental issues.

In a time when data speaks clearly but global inaction prevails, AdaptAction proposes a different approach: not alarmism, but motivation through experience. Not just another educational exhibit, but a narrative lab where the visitor plays the lead role, encouraged to explore connections and responsibilities.

The researchers’ questions

What fuels the project’s scientific foundation are the provocative and direct questions raised by Bocconi researchers:

- **Valentina Bosetti**, a climate change economics expert, explains the tools available to assess the costs and benefits of environmental policies.
- **Gianmarco Ottaviano**, with a macroeconomic perspective, reflects on how to build fairer, more sustainable global supply chains.

- **Edoardo Croci** and the team at Bocconi's SURLab explore the cities of tomorrow, between urban regeneration and nature-based solutions.
- **Vitaliano Fiorillo** and the AgriBusiness Lab focus on regenerative agriculture and redefining the value created by agricultural enterprises beyond economic profit.
- **Fabrizio Zerbini** and the Mobius Lab investigate Gen Z's views and expectations on urban mobility, envisioning future cities without private surface vehicles.

Four themes, many connections

AdaptAction is organized around four macro-themes, enabling personalized and interconnected exploration paths: Cities (How can we redesign urban spaces to adapt to climate change?); Agriculture (How can we transform one of the most impacting sectors into a key ally for mitigation?); Synergies (What multilateral strategies are needed to ensure a just and shared transition?) and Impacts (How can we effectively measure the positive and negative outcomes of our actions?)

Using QR codes and smartphones - –or directly through the digital platform - Meet Me Tonight visitors will navigate through content, data, images and questions. At the end of the experience, they receive a small "seed of change": a tangible gadget to plant, symbolizing that action starts with each of us.

A project that goes beyond the event

AdaptAction has a clear ambition: to go beyond the event itself, becoming a lasting platform for dialogue between universities, citizens and institutions. Because climate change is already here, and tackling it demands awareness, knowledge, and - above all - participation. There is no more time to wait for someone else to act. As the opening question reminds us, in a call that feels both universal and personal: "What can I do?" With AdaptAction, the answer begins right here.

Insuring the Unpredictable by Barbara Orlando

The climate protection gap is growing and entire territories risk becoming "uninsurable". Giulio Terzariol (Generali and Bocconi alumnus) indicates the transformations needed to guarantee access, equity and resilience in the new climate normality

Text:

Who will take care of insuring the world when climate risks become the new normality? It is a question that concerns not only insurance companies, but the entire relation between governments, markets and citizens. Because risk, when it can no longer be mutualized, turns into an element of exclusion. Giulio Terzariol, CEO Insurance of Generali and a Bocconi alumnus, knows the size of the challenge well enough. The so-called climate protection gap – the yawning gap between losses caused by extreme natural events and damages actually covered – has reached 57% globally and risks widening further, effectively making entire geographical areas "uninsurable". "The principle of mutuality is under pressure," says Terzariol. "If we don't intervene with new tools, there is a risk of anti-solidarity drift," which could transform insurance protection into a privilege reserved for the few. In the following interview, Terzariol outlines a path of deep transformation for the industry: from climate pricing technologies to the co-design of public-private solutions, including prevention, sustainable investments and a new governance of risk.

In recent years, we have witnessed dizzying growth in damages from extreme climate events. Some speak of a "climate protection gap", i.e. the growing gap between damages incurred and those actually covered. How is this gap evolving?

In 2024, global economic losses due to natural disasters reached $318 billion (source: Swiss Re Institute, Sigma Report 2025) and only $137 billion were covered by insurance,

exhibiting a real annual growth rate of 5-7%. The protection gap still stands at 57%. The most recent estimates forecast climate-related losses of $12.5 trillion by 2050, which will translate into $1.1 trillion in extra costs for health care systems (source: WEF, 2024). Climate change affects the environment, the entire society, human infrastructure and daily living.

In this context, what are the limits of the traditional insurance model?
The principle of mutuality is under pressure due to the increase in frequency, intensity and correlation of extreme weather events. At the same time, the reinsurance market, a historical stabilization lever, is experiencing a hardening phase with rising premia and greater selectivity. It is essential to strengthen our "primary business" with disciplined underwriting, adequate rates and diversified portfolio management. In addition to traditional coverage, alternative solutions are emerging that include parametric policies, CAT bonds and co-designed models with the public sector to share extreme and systemic risks.

How are insurance companies adapting pricing and forecasting models to the intensification of physical risk?
Insurance pricing is evolving from an approach based on historical data to models with future climate scenarios. New technologies support the use of data that until a few years ago were not accessible, such as data on the physical characteristics of properties. At the same time, the ability to analyze increasingly complex data enables insurance companies to accurately estimate potential future damages, customizing rates based on the specific vulnerability of an asset. The goal is not only to ensure technically adequate pricing, but to better understand the dynamics underlying climate events and promote measures of prevention that mitigate the impact of the natural event.

What role can companies play in closing the protection gap?
Our industry has a key role thanks to its experience in risk management, long-term investment and proximity to the customer. The insurance industry is well positioned to mobilize resources towards sustainable infrastructure, renewable energy and technological innovation. However, we need a clearer normative environment, a more level playing field and a framework that acknowledges the long-term time horizon taken by insurance companies.

In this scenario of increasing risk, more and more territories are considered "uninsurable" according to standard actuarial criteria, and the concept of mutuality comes under pressure. How can we manage the risk of insurance exclusion and avoid that insurance protection becomes a privilege for the few?
There is a risk of 'anti-solidarity' in markets exposed to extreme weather events, such as certain areas of the United States, with insurance costs that include implicit subsidies for high-risk areas. This can increase territorial selection and polarization. To prevent insurance protection from becoming a privilege, technical and institutional levers can be activated to mutualize catastrophic risk, such as dynamic pricing, government-funded preventative measures and public-private pooling solutions.

In the insurance sector, there is a much talk about "prevention" and "resilience". But how do insurance companies move to incentivize more sustainable behaviors and reduce exposure to risk?
The European insurance industry manages €9.5 trillion in assets (source: Insurance Europe), directing investment towards climate transition and resilience projects. Collaborative solutions are needed to protect people, infrastructure and economies which go beyond traditional risk transfer models. Leveraging technology will improve climate risk

assessment and climate resilience. And public-private partnerships will be essential for more accessible insurance coverage, especially in the case of SMEs. In addition, insurers can implement risk mitigation mechanisms that include reinsurance and CAT bonds.

Can you provide us some examples of the initiatives and projects launched by Generali?
The Generali Group has launched a series of technical initiatives aimed at strengthening its ability to deal with extreme weather events, through the optimization of underwriting processes and risk exposure management. At the same time, Generali is committed to customer support, offering concrete solutions for risk prevention and loss mitigation. In this context, we have created a center of excellence: the Climate Hub. It aims to strengthen knowledge of Natural Catastrophes (Nat Cat) and develop a detailed understanding of the expected impact of Nat Cat risk on insured assets, ensuring that this understanding is adequately shared throughout the insurance value chain. We also pay priority attention to SMEs, supporting their resilience against climate risks with the development of holistic risk management solutions that combine risk transfer and risk mitigation tools.

What structural transformations do you envision for the industry in the next 10 years, if it is to remain sustainable, inclusive and capable of coping with the new climate normality?
A first lever is greater access to standardized data on hazard and damage, enabled by a common EU taxonomy that would improve physical risk assessment and insurance underwriting strategies. Secondly, the development of sustainable loss prevention policies based on the collaboration between insurers, regulators and governments, in order to support families and SMEs in adopting adaptation and risk reduction measures. Finally, the creation of an integrated ecosystem with shared governance and open data that would ensure there is systemic resilience in the new climate normality.

Collaboration between the public sector and private business is often invoked but rarely implemented. Are there virtuous models that Europe should consider as benchmarks in terms of climate risk protection?
Partnerships between private entities and public bodies are essential to promote wellbeing, reduce inequalities and increase climate resilience. Generali has long collaborated with the United Nations Development Program to strengthen the financial resilience of vulnerable communities and MSMEs: together we develop research, tools and innovative insurance solutions, promoting holistic resilience solutions that combine risk transfer and risk management.

CAT Bonds: Extreme Finance for Extreme Risk by Florian Nagler

As climate disasters intensify, “catastrophe bonds” promise fast, market-based relief. But to truly deliver resilience, they must overcome design flaws, pricing challenges and barriers to broader adoption

Text:

As climate-related disasters become more frequent and more intense, the financial sector faces a pressing challenge: how to ensure immediate access to liquidity when catastrophe strikes. One promising but still underutilized solution lies in catastrophe bonds – better known as CAT bonds. While largely unknown to the general public, they could play a pivotal role in building financial resilience to climate risk.

The idea behind CAT bonds is as simple as it is powerful: shift part of the insurance burden from the balance sheets of insurance companies to the capital markets. In practice, investors provide capital that will not be returned in the event of a predefined natural disaster – such as a hurricane, earthquake or wildfire. This relaxes insurers’ liquidity constraints which helps to cover claims.

In return, investors receive high interest payments, reflecting the significant risk they are taking on. Given the rising economic losses from natural disasters, this is not just a theoretical concern. As of early 2025, the global CAT bond market reached an all-time high of $52.2 billion in outstanding volume – a 17% increase over the previous year and a clear signal that demand for market-based climate risk solutions is growing rapidly.

Still, the reality is more complex than the concept. One major limitation of CAT bonds is what is known as basis risk – the mismatch between an insurer's actual losses and the bond's trigger conditions. Many CAT bonds rely on parametric triggers based on aggregate damage across regions or sectors. That means an insurer may face heavy localized losses from, say, a hurricane, but not receive a payout if the industry-wide threshold is not met. In that case, they not only suffer the losses but must also repay the investors.

This is not just a technical flaw – it is a structural weakness. A tool meant to reduce risk can, if poorly calibrated, become a source of further financial strain.

There are also challenges on the investor side. Despite their attractive returns and diversification benefits, CAT bonds remain a niche product. They are complex to price: estimating the likelihood of rare, extreme events requires advanced modeling and cross-disciplinary knowledge, from climate science to seismology. Most investors lack this specialized expertise. What's more, many institutional investors face regulatory or internal constraints that restrict investment in high-risk, illiquid assets.

The result is a market that, despite its record size, still has not reached its full potential. CAT bonds could, in theory, be used far more widely – not only by insurance companies, but also by banks and other financial institutions exposed to climate risk. Imagine a bank facing loan defaults after a flood or wildfire. A tailor-made CAT bond could hedge that exposure, reinforcing the bank's balance sheet stability when it is most vulnerable.

Ultimately, CAT bonds represent a fascinating frontier in climate finance: not a silver bullet, but a powerful tool – if designed and deployed effectively. Their evolution will depend on three key improvements: more accurate triggering mechanisms, better pricing models and broader accessibility for investors.

In a world increasingly shaped by systemic climate risks, such innovations are not a luxury. They are a necessity.

Banks Tested by Climate by Eleonora Montani

New European guidelines require the banking system to integrate ESG risks into governance and strategy. This is a crucial step for financial stability and the green transition

Text

The European Banking Authority (EBA) published the final guidelines on ESG risk management on 9 January 2025, set to be applied starting 11 January 2026 (with a one-year extension for less complex institutions). These guidelines constitute a strategic regulatory response to the challenges posed by climate change and other environmental, social and governance factors, with the explicit aim of strengthening the resilience of the European banking system.

Within the EBA's sustainable finance strategy, the new guidelines represent an essential pillar of the EU banking package implementation plan. Under Directive 2013/36/EU (CRD), the EBA is tasked with defining minimum standards and common methodologies to enable credit institutions to systematically identify, assess, manage and monitor ESG risks, with particular attention to environmental risks related to climate change. In this sense, the

guidelines constitute an essential methodological reference for the systematic integration of ESG risks into banking governance, risk management processes and strategic planning.

One of the key pillars of the new provisions concerns aligning the banking system with the European Union's climate neutrality objectives by 2050, as established by Regulation (EU) 2021/1119 ("European Climate Law"). This objective implies a profound transformation of the European economy, following a low-carbon, climate-resilient model consistent with the Paris Agreement and the UN 2030 Agenda for Sustainable Development.

The climate transition, however, is not without financial implications: the shift towards a carbon-free economy involves transition risks, such as technological obsolescence, changes in consumer preferences and capital reallocation. Added to these are physical risks, arising from the increased frequency and severity of extreme climate events (e.g. floods, droughts, fires) and the chronic effects of global warming, such as desertification, biodiversity loss and sea-level rise. Integrating these risks into banking strategies is not just a precautionary measure, but a necessary condition to ensure long-term financial stability, prevent systemic shocks and support an efficient allocation of capital towards activities compatible with climate objectives. In this sense, the EBA guidelines operate as an enabling regulatory instrument for ecological transition.

The guidelines impose a profound rethinking of banking risk management models. Institutions are called upon to identify, measure, manage and monitor ESG risks, with particular emphasis on environmental and climate risks. These risks must be integrated into capital risk assessment processes (ICAAP), risk appetite definition, internal controls and internal and external reporting systems. Banks are required to develop specific climate risk management plans, with deadlines, measurable objectives and intermediate milestones, aligned with European climate targets and – for transnational entities – also with climate regulations of third countries.

Particular attention is paid to assessing the materiality of ESG risks through multidimensional methodological approaches, based on granular data and prospective scenarios. The context justifying these measures is characterized by an increasing exposure of the financial sector to physical and transition risks, arising from environmental factors (e.g. extreme climate events, biodiversity loss), social factors (e.g. human rights, health, digitalization) and governance factors (e.g. corruption, leadership deficiencies).

Climate change represents a global systemic risk capable of compromising the orderly functioning of financial markets. Unlike traditional risks, climate risk is characterized by extended and uncertain time horizons, non-linear but cumulative effects, and presents complex interconnections between physical, economic, social and geopolitical risks. In this context, banks must develop predictive and adaptive capabilities superior to those of the past. Climate risk management can no longer be limited to a compliance function but must become an integral part of the competitive strategy, business model and organizational culture of financial intermediaries.

The EBA guidelines constitute a fundamental step towards a more resilient, transparent and sustainable banking model. In an increasingly interconnected and vulnerable economy, the integration of ESG risks – and particularly climate risks – represents a systemic necessity and an institutional responsibility. The banking sector's ability to actively contribute to the transition towards a net-zero emissions economy by 2050 will be crucial not only for financial stability but for the socio-economic resilience of the European Union as a whole.

SMEs: Climate Resilience Is Missing by Francesco Perrini

The majority of European small- and medium-sized enterprises are still unprepared to deal with the economic impacts of climate change. Only those who have already invested in sustainability seem able to cope

Text:

The analysis of the economic damages associated with extreme weather events reveals a worrying scenario. According to the joint report of the European Central Bank and EIOPA released in December 2024, natural disasters in the EU linked to climate change have caused direct economic losses estimated at around €900 billion. Particularly alarming is that damages are concentrated in recent years: one fifth occurred in the 2021-2023 three-year period alone, with costs of €65 billion in 2021, €57 billion in 2022, and €45 billion in 2023.

In this scenario, SMEs present multiple aspects of vulnerability. First, SMEs generally have more limited financial reserves than larger companies, and this reduces their ability to absorb external shocks without compromising business continuity. Second, their often-circumscribed geographical presence exposes them more to localized risks, without the benefits of territorial diversification that multinational companies can rely on. Furthermore, their limited access to advanced financial instruments and specialized skills compromises the ability to adopt climate adaptation strategies. Finally, their dependence on local supply chains, while on the one hand can act as a mitigation strategy, on the other hand it increases vulnerability to extreme climate events.

But how aware are European SMEs of such risks, and what strategies do they implement to mitigate or transfer climate risk?

With reference to the first point, recent research conducted by the SDA Bocconi Sustainability Lab has highlighted a heterogeneous picture when it comes to climate risk awareness in European SMEs. The study shows that, on average 50% of SMEs analyzed are aware of their exposure to climate risks, with geographical variance ranging from 75% in Italy to 31% in Slovenia. Particularly interesting is the relationship between maturity in terms of sustainability and risk perception: 69% of companies that have adopted sustainability strategies early on exhibit high awareness, significantly higher than the sample average, while latecomers stop at 33%.

With reference to the second point, that of climate risk management, the study highlights how traditional insurance against extreme events remains the main instrument, with an average adoption rate of 31%. Purchase of business interruption insurance follows at 16%, while more innovative solutions such as public-private partnerships and risk-transfer and risk-sharing agreements show more modest adoption rates.

The research reveals a particularly significant aspect: companies that are farther ahead in their sustainability journey adopt more sophisticated and complex management solutions than companies that lag behind in this compartment. The greater propensity of “sustainable” companies towards climate risk transfer tools, together with their higher implementation of adaptation strategies, seems to highlight a positive relationship between sustainability maturity and resilience. This connection seems to demonstrate that companies that have integrated sustainability into their business models are not just responding to stakeholder expectations, they are also developing a superior ability to identify, assess and mitigate climate risks. This approach allows them to strategically position themselves to more effectively address the challenges arising from global warming in the current economic context.

Box: The paper

Fostering Sustainability in Small and Medium-sized Enterprises, Generali SME EnterPRIZE White Paper – 4th edition, by Sustainability Lab, SDA Bocconi School of Management

Climate Rules: Europe Is Slowing Down by Andrea Resti

The softening of climate reporting requirements by the Commission risks slowing down the green transition of the financial system. And it leaves EU banks deprived of the tools to measure and manage climate risk

Text:

The banking system represents a fundamental transmission mechanism for the success of the fight against global warming in the European Union. Credit institutions are required to measure and make public their financing to the sectors most responsible for the production of greenhouse gases, such as steel or energy, gradually enabling them to convert to less carbon-intensive technologies. In this way, banks act in the public interest and, by helping their debtors plan the ecological transition in advance, they protect them from climate risk and a rude awakening that would leave bankruptcies and losses in its wake.

Since 2022, with increasing insistence, the ECB has asked large credit institutions to measure (or at least estimate) the impact the loans they provide have on global warming, equipping themselves with risk indicators and monitoring them so that company boards can encourage the progressive shift towards more sustainable investments. Since 2023, the European Banking Authority has introduced mandatory reporting according to which major financial institutions must inform the public on the outcomes of these attempts and expected trajectories until 2050 (when net greenhouse gas emissions should be completely eliminated).

For this effort to be successful, it is important not to leave all the burden of the climate transition on the credit system, which should be shouldered first of all by the public sector. Let's think for example of housing mortgages: given that a large part of greenhouse gases is emitted by heating systems, incentives are needed that allow owners to make improvements aimed at saving energy and avoiding the use of particularly polluting sources.

As part of this virtuous collaboration between the public and private sectors, the European Union has introduced two important measures: the CSRD (Corporate Sustainability Reporting Directive) and the CSDDD (Corporate Sustainability Due Diligence Directive). The former requires a growing number of companies to report their environmental, social and governance impacts in a detailed and transparent manner; the latter requires large companies to identify, prevent and mitigate negative impacts on human rights and the environment for their suppliers and customers. With the progressive entry into force of these rules, expected in the coming years, banks would receive an increasing volume of homogeneous, standardized and generally reliable data to know the actual carbon emissions caused by financed activities.

However, last February the European Commission asked Parliament and the Council to put these measures on hold in order to significantly soften them, reducing the number of entities which are required to report by over 80% and, to an even greater extent, the volume of data requested. This abrupt U-turn, called the "Omnibus Package," was justified by the mantra of competitiveness, also in light of the very permissive attitude of the Trump administration in the United States in terms of emissions.

This is caricatural and unfortunate. The first requirement for being competitive is to stay alive and, if banks are not provided with the information needed to understand and

mitigate the climate risks of companies they lend to, it will be like forcing them to drive in the fog on a road full of potholes. Saying that rules suffocate the market is like saying that water drowns fish: when Silicon Valley Bank blew up in 2023 because its risks were not adequately monitored, we thanked heaven that European banks were subject to more stringent scrutiny. Before the ink has even dried on that story, once again they would have us believe that rules and transparency are just a useless hindrance.

Box: The Libguide

Read the bibliographic guide of the Bocconi Library dedicated to climate change and climate risk

Work and organizations

The Perils of Over Connection by Alessandro Iorio

Top performers at the center of workplace networks face overload and burnout. Understanding informal relationships is key to retaining talent.

Text:

Employee turnover is costly, disruptive, and–despite all the data we collect–very hard to predict. Most companies point to external reasons when someone leaves: a better offer, a higher salary, a relocation. But my research suggests that the real drivers of turnover often lie within the organization itself, hidden in the structure of workplace relationships.

Over the past few years, I have studied how employees' positions in the internal social network of a firm–the informal web of advice, collaboration, and support–can shape their likelihood of staying or leaving. Results have been quite surprising. We tend to assume that being central in a workplace network, that is, being the go-to person in a company, is always a good thing. It signals trust, competence, and influence. Yet, my research uncovers a more complex picture: employees who are highly central are also the ones most exposed to interruptions, overload, and eventual burnout. Specifically, combining field, archival, and experimental data, I consistently show that the association between social networks and turnover is non-linear. While employees at the very periphery of the network are more likely to leave because they feel excluded or underutilized, those at the very center are also at higher risk of quitting. Their constant involvement, nonstop flow of requests, and pressure to be always available can lead to burnout. The safest position? Somewhere in the middle. Those who are well-connected but not overwhelmed are the most likely to stay.

That centrality can backfire is not always visible on the surface. These employees rarely complain. They are seen as high performers and are often rewarded for it. But over time, the very thing that makes them indispensable, such as constant requests and continuous connectivity, can become a source of fatigue. With little time for reflection or recovery, they face what the literature refers to as information overload. When these individuals leave, it is not just a loss of talent; it creates a ripple effect across the whole organization.

This is a blind spot in many retention strategies. We invest heavily in wellness programs, engagement surveys, and tailored benefits, which are all important efforts. But we often miss the relational structure that shapes how work actually gets done. Traditional people-analytics models focus on individual attributes. But a social network approach may reveal that risk is relational. Some of the most at-risk employees are not isolated or disengaged: they are overconnected.

The solution is not to discourage collaboration or responsiveness, but to be more intentional about how we design work. Mapping the social networks within an organization can help us identify who is carrying an unsustainable share of the relational load. These employees may need more support, protected time, or redistributed responsibilities. To be clear, this does not mean turning every human resource department into a team of network analysts. But it does mean acknowledging that social connections and turnover are entangled in ways we have only just begun to understand.

As firms deal with post-pandemic work arrangements, hybrid models, and evolving expectations, this is a chance to rethink not just where people work, but how they are connected with each other. Sometimes, keeping your best people does not require more perks, but rather a better design of informal relationships.

Healthcare policy

When Timeliness Is the First Treatment by Marianna Cavazza, Natalia Oprea

A Bocconi CERGAS study analyzes five international models for promoting timely diagnosis and integrated care in cancer treatment, emphasizing the value of continuity, coordination and health literacy

Text:

Over the past decades, mounting evidence from scientific research and clinical practice has underscored the critical role of early detection in improving outcomes for certain types of cancer. When identified at an early stage, these cancers are more likely to respond to treatment, resulting in first and foremost more surviving patients, in addition to a significant reduction in both the societal and economic burden of the disease.

Yet translating this potential into practice requires more than medical insight alone. Effective early detection, diagnosis and treatment strategies demand coordinated policy action, sustained investment and thoughtful organizational reform within health systems.

A recent study by a research team from CERGAS (Marianna Cavazza, Natalia Oprea and Amelia Compagni), supported by an unconditional grant from Brunswick Brussels, sheds light on how five countries – Denmark, the Netherlands, Italy, Poland and Chile – are addressing this challenge. The analysis highlights the diverse policy and organizational solutions these countries have implemented to support timely detection, diagnosis and treatment for cancers where early intervention proves most impactful.

The most effective interventions to support early detection, diagnosis and treatment of cancer are those grounded in strategies that ensure comprehensiveness, continuity and timeliness.

Comprehensiveness means engaging all relevant stakeholders – from NGOs and patient associations working on health literacy campaigns to local and national public authorities and healthcare professionals. This is best achieved through cross-sectoral coordinating bodies that foster collaboration across organizations.

Continuity refers to striking the right balance between centralization and decentralization, while promoting integration among the actors involved. This includes the use of a wide range of tools, from clinical practice guidelines to the development of comprehensive cancer care networks.

Timeliness involves designing patient-centered logistics systems and strengthening quality assurance mechanisms to ensure that care is not only accessible but also delivered promptly and effectively.

Promising evidence was collected on the implementation of strategies aimed at ensuring timeliness and continuity, particularly through care pathways and structured referral processes that link primary care at the community level with secondary care in highly specialized oncology hospitals in Denmark and the Netherlands. Likewise, the development of comprehensive cancer care networks in both the Netherlands and Italy offers encouraging examples of how cancer care systems can be made more integrated and complete. Finally, although following different approaches, both Denmark and the Netherlands have pursued strategies to promote comprehensiveness in cancer-related health literacy. They have done so through cross-sectoral coordinating bodies and investments in patient-informed, patient-shared decision-making models aimed at better understanding and involving patients and their families in deciding their care.

Finally, World Health Organization guidelines and the EU's Europe Beating Cancer Plan emphasize the importance of models that ensure timeliness and continuity in early detection and diagnosis of cancer. The analysis however revealed that a fully developed conceptualization of an integrated pathway – from cancer health literacy to early treatment – seems to still be lacking.

Even in countries like Denmark and the Netherlands, which have made significant investments in this area, a comprehensive vision of an "early cancer care" continuum has yet to be fully realized. This observation highlights the substantial effort and investment required to promote and implement a truly integrated pathway that extends beyond diagnosis and treatment to also encompass the earlier phases typically associated with public health and prevention programs.

Care to Action: Joining Forces Against Cancer, Starting with People by Diane Orze

An experience-driven installation to discover the role that each of us can play in the fight against cancer. A journey through prevention, innovation, and shared choices, supported by Bocconi research

Text:

What does fighting cancer really mean? It is not just a medical issue. It is a human, collective journey, made of public and private choices, innovation and listening, policies and relationships. This awareness is the foundation of **Care to Action – Connecting Solutions for Beating Cancer**, Bocconi University's new outreach project, which will be presented at Meet Me Tonight 2025 (September 26-27).

The experience is designed to guide visitors along the "journey" that any person can take – or has already taken – in their encounter with cancer: as a patient, as a caregiver, as a citizen. It is a physical and symbolic journey that puts the person at the center and shows how the fight against cancer is a cross-cutting alliance involving individuals, families, doctors, institutions, and the society in general.

"Research must engage with society on issues that affect us all. Care to Action was created to show, in a concrete and accessible way, the value that a multidisciplinary approach can have in transforming care and prevention into truly inclusive and people-centered tools," explains Elena Carletti, Dean for Research at Bocconi University.

A journey between science and humanity

Designed in collaboration with the design company Logotel, the installation takes the public through the different stages of the cancer experience: from prevention to health literacy, from early screening to treatment, and finally to post-treatment management. Each stage features scientific evidence, open questions, and tools for reflection, in a format that is accessible to families and students.

The exhibition is supported by the research work of a team of Bocconi professors active on different fronts. Francesca Buffa, Full Professor of Computational Biology, shows how artificial intelligence can support more timely diagnoses and personalized therapies. Andrea Tangherloni, Assistant Professor of Computing Sciences, focuses on mathematical models as predictive tools to improve daily clinical work.

On the healthcare policy side, Marianna Cavazza (Associate Professor of Practice in Health Policy, CERGAS Bocconi) investigates how to effectively integrate all stages of care, promoting dialogue between patients, family members, professionals, and institutions. Oriana Ciani (Associate Professor of Practice in Health Economics and HTA, CERGAS Bocconi) broadens the perspective towards crucial issues such as access to treatment,

patients' psychological well-being, and the active role of those coping with the disease in the decision-making process.

Research, listening, participation

Care to Action is not an exhibition to be viewed passively. It is an invitation to take a stand. Visitors can experience first-hand the projects Bocconi is carrying out to innovate the healthcare system hands-on: studies such as CINDERELLA or SHAREVIEW, which help women with breast cancer make more informed choices; initiatives such as HI-PRIX and Precision Oncology, which aim to make healthcare technologies accessible; and programs such as PRO4ALL, LuCapp, and SAGITTARIUS, which value the patient's point of view in assessing treatment effectiveness.

Each project has an information "postcard" that visitors can collect along the way: a simple gesture to take away a piece of knowledge, and perhaps share it.

A shared struggle

Far from any heroic rhetoric, Care to Action restores complexity and depth to the issue of cancer. The person is no longer a passive patient, but an active subject in dialogue with a network of actors–doctors, nurses, associations, policymakers, family members, and friends. Because in this challenge, no one is truly alone. And everyone, in their own role, can make a difference.

Because cancer affects us all. But the response can and must be collective. And it starts here.

Taxation and ai

What Companies Don't Say (But Do Write) by Paul Demeré, Francesco Grossetti

Automatic text analysis of financial disclosure reports of companies can improve forecasting of their tax behavior, by revealing indirect but valuable signals for investors and revenue agencies, a study reveals

Text:

Corporate taxes often seem like an obscure and technical topic, far removed from the concerns of everyday life. Yet, they affect nearly everything: how much governments can spend on schools or infrastructure, how shareholders value companies and even whether a business is playing fair in the economic game. Taxes represent one of the most substantial costs facing companies today, with important implications for their business operations. The problem? Understanding a company's tax behavior is surprisingly difficult, even for professionals who do it every day.

One reason is that companies are not exactly eager to "spell things out". Talking too much about their tax strategies can draw unwanted attention from competitors and tax authorities alike. As a result, what is publicly disclosed about taxes in corporate reports tend to be cryptic, usually highly standardized and buried in dense language. But what if, hidden in all that text, companies are telling us more that we think? In a study forthcoming in the Review of Accounting Studies, together with Olga Bogachek and Antonio De Vito, we examine whether recent advances in natural language processing and machine learning can help corporate stakeholders better forecast companies' tax outcomes. We looked at 14 years of US corporate filings and used topic modeling to "read between the lines" of thousands of annual reports and to quantify what companies were saying in those reports. Such measures of textual content were then added to machine learning models developed to predict tax outcomes like companies' effective tax rates, cash taxes paid and amounts paid as settlements to revenue authorities.

The results were striking. Even when companies don't say much directly about taxes, the way they talk about other things – internal controls, corporate structure, mergers or regulatory risks – can reveal a lot about their likely tax outcomes. In fact, when we used these indirect clues to forecast real-world tax results, we were able to cut prediction errors by more than half.

Why does this matter?

First, for investors and lenders, it means better information for evaluating financial risks. For policymakers and tax authorities, it offers a new lens to spot aggressive or unsustainable tax practices before they make headlines. And for society at large, it hints at a path toward greater accountability: if stakeholders can extract meaningful insights from what companies do say, even if indirectly, it could pressure firms to be more transparent and responsible in their tax behavior. Second, today's corporate reports are long, complex and often overwhelming. That is partly why many readers skip over them. But with the right tools, we can turn this ocean of words into actionable information. Our work shows that artificial intelligence and machine learning are not just buzzwords: they can help make sense of complexity and bring clarity to topics that affect us all.

In a time of growing concern over corporate fairness and fiscal responsibility, understanding how companies manage their taxes is no longer just a job for specialists. It's a matter of public interest. And if companies won't always tell us directly, we now have better ways to listen carefully to what they're saying between the lines.

Box: The paper

Using Narrative Disclosures to Predict Tax Outcomes, by Olga Bogachek, Antonio De Vito, Paul Demere, Francesco Grossetti

Digital networks

The Prism of Reputation by Andrea Costa

A study by Giuseppe Soda and other authors shows how status and public behavior contribute to generating trust even among strangers, through observable signals amplified by the online context

Text:

In today's hyper-connected world, trust is a precious currency. Whether it's deciding who to follow or trust for advice on a social trading platform, as well as in other economic decisions such as hiring or purchasing, direct relationships are no longer enough. In digital environments, where actors often do not know each other, what is trust based on?

This is the question that the research study "Prismatic Trust: How Structural and Behavioral Signals in Networks Explain Trust Accumulation" sought to answer. Published in Management Science, it is authored by Giuseppe Soda (Department of Management and Technology, Bocconi University) together with Aks Zaheer and Mani Subramani (both at the University of Minnesota), Michael Park (INSEAD) and Bill McEvily (University of Toronto), and introduces the key concept of "prismatic trust": a mechanism through which social and digital networks generate trust by observing structural and behavioral signals.

Prismatic trust: the power of observable signals

When we move across a social network, we are not just nodes connected by threads: we also express signals that others observe and interpret. This is where the concept of "prismatic trust" coined by the authors comes into play: trust is not built only through direct relationships, but can emerge from visible signals that the network itself amplifies, like a prism refracting light.

The first type of signal is structural status: the position an individual occupies in the network, measured in terms of followers, and above all, the prestige of those who follow him or her. In practice, having many followers is not enough: it is essential to be followed by other influential users. This status, according to the authors, works as an implicit indicator of competence. If a trader is followed by other high-profile traders, he or she is likely to be perceived as an expert, and therefore trustworthy.

The second signal is behavioral: named relational behavior, it is the way in which one interacts with others. In particular, the research study measures how positive a user's public messages are, i.e. expressing thanks, encouragement, offers for help. This type of communication conveys benevolence and cooperative intentions, which are essential to inspire trust even in those who observe the interaction from afar.

The researchers explain that the two signals do not act in isolation. On the contrary, they reinforce each other. A trader who enjoys high status and appears friendly and helpful will be perceived as even more trustworthy. It is the combination of structural visibility and relational qualities that creates fertile ground for the accumulation of trust, even between complete strangers.

The social experiment with 28,000 traders

To test the theory, the researchers analyzed 38 weeks of data from EZ-Trade (not actual name), a leading social trading platform. Here, users can automatically "copy" the trades of other traders – an act that implies trust, because it entails financial exposure.

Findings confirmed the research hypothesis: the traders who enjoyed a high status (i.e. were followed by other influential users) and expressed positive feelings in public

messages were copied much more frequently. Even more interestingly, the two factors reinforced each other.

In terms of numbers: moving from the 25th to the 75th percentile in status and positivity, accumulated trust (measured in the number of copiers) increased by 211% compared to the mean.

A new paradigm for organizations

Evidently, the conclusions of this research are not only useful to traders. They have profound implications for companies, digital platforms and organizations that want to generate trust on a large scale. Therefore, it is not enough to build reputation by remaining within the circle of direct relationships. We need to design environments in which signals of competence and goodwill are public, visible and interpreted correctly by other users.

In an era in which relationships multiply but certainties are thinning, we have proof that trust is not born only out of direct experience, but from what you let other people glimpse. The theory of prismatic trust highlights that, in social networks, it is not only who you are that counts, but how you appear in the eyes of others: every signal (a prestigious connection, a polite message) is a fragment of reputation that is refracted and amplified. Through these signals, even between strangers, that spark we call trust can be ignited.

Box: the paper

Prismatic Trust: How Structural and Behavioral Signals in Networks Explain Trust Accumulation, by Giuseppe Soda, Aks Zaheer, Mani Subramani, Michael Park, Bill McEvily

Attention EconomY

The New Inequality Is of a Cognitive Kind by Armando Cirrincione

In the age of infinite information, personal concentration is a scant resource. Those who know how to focus their attention remain active agents, while those who succumb to doom scrolling can be manipulated

Text:

In a world where information is abundant, attention is increasingly becoming a scarce resource. Every day, billions of people navigate an immensity of digital content where platforms, brands and creators compete to capture a few seconds of attention that can transform mindless scrolling into engagement, conversions and revenues. It is the so-called attention economy, where every second spent on a web page, and every like and share can generate monetary value through advertising, conversions and of course consumer profiling. It is a feedback loop: the more attention the system captures, the more data it collects; the more data it can collect, the more it can personalize content; the more personalized content is, the more it can capture attention. The result is an increasingly sophisticated system for attracting and retaining people, designed to maximize time spent on the site. Recommendation algorithms analyze our behavior in real time to predict what will keep us hooked to the screen. Push notifications use intermittent conditioning principles borrowed from the world of gambling; infinite feeds eliminate natural interruption points; video autoplays, countdowns in stories, 'double tap to like', etc. are all mechanisms designed to reduce cognitive friction and increase the likelihood of engagement. They are all tools of the trade in what Tristan Harris names 'persuasion technology'.

This competition has profound consequences on our ability to concentrate. Numerous studies show that digital crowding increases cortisol levels and reduces cognitive efficiency. The phenomenon of so-called continuous partial attention is reshaping our brains, privileging superficial reactivity over deep reflection. It is alarming: those who grow up in this system show increasingly fragmented attention patterns. The ability to read long texts, do in-depth analysis and engage in critical thinking become skills at risk for those who become accustomed to the instant gratification of micro-content. Observed from another angle, the phenomenon is also present in those who make use and abuse of Generative Artificial Intelligence (GenAI). One of its most widespread uses is asking AI to summarize complex texts: the algorithm is just asked to draft a synopsis in the form of bullet points. It is an efficiency strategy, but which has the hidden cost of making people become less and less capable of reading and above all understanding texts.

Paradoxically, the digital age has truly democratized access to information like never before in human history. Anyone can publish, create, share knowledge. Wikipedia, free online courses, educational podcasts, etc. have given billions of people access to knowledge. The problem is no longer the scarcity of information, but the limited ability of current minds to process it in a meaningful way.

In this context, a new form of inequality emerges: the one between those who know how to manage their attention and those who fall prey to attention-seeking platforms. The new cognitive elites are learning to protect themselves from the online deluge, while the rest of us remains trapped in cycles of passive consumption of content designed to be irresistible. Finding the right balance will be one of the greatest social and educational challenges of the coming years. Maintaining the control of one's personal attention is not only a question of personal productivity and skills to be exploited in the workplace, but above all a question of cognitive autonomy and, ultimately, an issue of democracy. In a

world where whoever controls attention controls perceived reality, the individual's ability to concentrate is tantamount to an act of resistance and, most especially, freedom.

The Internet Is a Souk, Not a Cathedral by Andrea Celauro

In the creative chaos of the web, the winner is not the one who innovates at all costs, but the one who builds relevant content one step at a time. Alessandro Mininno, Bocconi alumnus, co-founder of Gummy Industries, discusses this topic

Text:

In Italy, today there are 42 million YouTube users, compared to 32 million on Instagram and 22 million on TikTok. "According to data from Comscore, a platform analyzing internet traffic, YouTube users in our country could be as many as 97% of the population between 18 and 54 years of age." What does this mean? "That YouTube is anything but a platform for children. At most, it is for adults with a Peter Pan syndrome." says Alessandro Mininno, Bocconi alumnus, co-founder of the digital communication agency Gummy Industries and of the content creation agency Flatmates (but his background also includes web marketing for Expo 2015 and numerous teaching assignments). And it means that on YouTube – like or perhaps even more than other platforms characterized by the endless offer of content – the battle for user attention becomes crucial in determining the success of content creators.

Alessandro, what is the recipe for attracting user attention?
If I knew, I would be a billionaire already! Let's say that what I learned from YouTube is that the first variable is to respect the person in front of you. You have to respect the time of users, offering content that is as precise and exclusive as possible. Think about corporate videos: they are often made more to please insiders rather than outsiders of the company. They are too self-referential. Furthermore, if I am a YouTuber, I must not talk about things that are too niche.

How important is originality?
Originality is a huge economic risk. It's like in cinema: it is much riskier to make a new film than a sequel or a remake of a successful movie. Furthermore, inserting yourself into existing cultural trends maximizes return on investment. Fortunately, however, there are praiseworthy exceptions. However, jumping on existing trends, proposing formats already existing elsewhere to your audience, perhaps taken from YouTubers from other countries, should not be taken as a negative thing. What makes the difference and determines success is the way in which that format is applied to the reality of the content creator. It is how the YouTuber makes it his or her own and manages it to make it exclusive for the community of viewers.

Does content packaging also have its importance?
Today, 80% of a video's success is given by title and thumbnail, the preview thumbnail. If they are not attractive, users do not click and if they don't click, they don't watch. However, what must be above all kept in mind is that online recipes and online tactics change every day. No recipe is valid forever. The assemblage of content on the internet should be seen as a Souk, as a bustling street market, not as a temple of worship fixed in stone like a Cathedral. It is not a building constructed once and for all, but a noisy set of stalls: if one of these does not work, it is substituted by another that sells a different ware. The best way to attract attention, therefore, is incremental, a little at a time.

Exclusive content, even if not original, and respect for the user. This is how the YouTuber makes an impact

We read newspapers less and less and we prefer to follow five finance YouTubers rather than read IlSole24Ore. If they show me they can speak with competence, I trust them, even though expectations are lower online. Companies have also understood this, and today they prefer communication entrusted to content creators to top-down communication, for example on television (which customers have learned to recognize as not always true and transparent), even at the cost of losing control over content. Because on the other hand, this way they can directly reach the creator's community, which trusts him or her. Online, a lie doesn't have a leg to stand on. When YouTubers lie, the community immediately exposes them in the comments below the vids. Obviously, the content creator must speak with competence on the topic. It's true that bogus gurus (fuffa-guru in Italian) exist, but those who are unable to distinguish real gurus from fake ones online are the same people who wouldn't be able to tell a charlatan from an expert on TV.

Innovation

More Impact, Not More Spending By Daniel Gros

EU support for innovation is not closing the technological gap with the United States and China. To truly support growth, we need fewer transnational consortia and more financial space for small independent companies with high-potential ideas

Text:

Over the past 10 years, the European Union has spent around €100 billion on research and development through the Horizon program, a pillar of EU innovation policy. However, the results of this massive injection of resources are wanting. Europe remains behind the United States, and now also China, in terms of research spending, especially in high-tech sectors such as software and artificial intelligence.

The real problem is that the European industrial ecosystem remains anchored to "medium-tech" industries – such as automotive – where innovation is mostly incremental and potential growth is limited. What is missing in the European Union, however, is the critical mass of truly high-tech companies that drive productivity and innovation in the United States.

The EU's Horizon program was supposed to encourage the creation of new high-tech companies. Instead, more than half of Horizon funding has gone to large industrial groups or their subsidiaries, often involved in dozens if not hundreds of projects. These companies have posted growth performance that is lower than either their global high-tech competitors or the average for European companies. Other funds have been spent on consulting services and other ancillary firms, which are useful but rarely drivers of true innovation.

It also doesn't help that most EU calls for proposals require the creation of large transnational consortia to apply, with over twenty participants and very detailed research objectives decided "from above". This "collaborative" model absorbs between 60 and 80% of the funding, but the companies that win these EU calls do not derive any long-term benefits from them. Transient positive effects are seen only during the project (typically three years), but then they disappear.

It is not surprising that these very detailed research programs do not lead to innovative ideas because they are developed by large Programming Committees composed of representatives of member states, mostly government officials with no specific knowledge of the subject matter who then end up pushing the interests of their national champions.

There is one segment that works, however: the programs targeting independent small and medium-sized enterprises, such as the SME Instrument or the EIC Accelerator. Here we see lasting positive effects, both in terms of revenues and registration of high-tech patents. The independent qualification is worth highlighting because three-quarters of the companies that are classified as small or medium-sized for Horizon projects belong to larger groups and are therefore only nominally SMEs. Unfortunately, only a minority of the funds actually reach small and independent companies: 12% of the total, if we consider the entire Horizon program.

To reduce the gap in terms of competitiveness with the United States and China, the next multiannual financial framework of the EU budget must focus on funding new ideas, not already consolidated structures: fewer large consortia, more open and flexible calls that allow the creativity and risk-taking capacity of small independent companies to emerge.

In this sense, EU funds can become the springboard for the birth of the technological "champions" of the future. Even companies like Google or Amazon were born from the

initiatives of individuals or small teams, not from the research and development divisions of large groups.

It is not enough to simply spend more, you need to spend better: to carefully select recipients and be open to new ideas, instead of imposing a predetermined research program. This will favor the birth of new high-tech companies. Success is not measured by the number of projects funded, but by the real impact they have on innovation and growth.

Box: The paper

Funding Ideas, Not Companies: Rethinking EU Innovation Policy from the Bottom Up, by Clemens Fuest, Daniel Gros, Philipp-Leo Mengel, Giorgio Presidente, Cristina Rujan

Financial models

The Implicit Variable Anticipating Shocks by Barbara Orlando

Published in Energy Economics, Francesco Rotondi's study reveals how seasonality and especially jumps in convenience yields help explain turbulence in the natural gas market

Text:

Natural gas is a staple of the European energy market, but its price is erratic. Since gas is versatile, cleaner than other fossil fuels and essential for integrating renewables, it has seen demand grow steadily. However, predicting its market trends poses a challenge. The price spikes recorded in recent years, especially after the pandemic and the war in Ukraine, have severely tested the nerves of investors and operators in the industry. Forward curves have become distorted, forecasting models have proven inadequate, and most tools for hedging against risk have proved ineffective.

The key variable is the convenience yield

This is the context where the research study by Francesco Rotondi of the Bocconi Department of Finance can be placed. His paper, "Seasonality and Spikes in the Natural Gas Market", published in the journal Energy Economics, proposes an alternative approach to understand the gas market. He says we need to look beyond the spot price and focus on a hidden but revealing variable, the convenience yield. This barely visible but highly informative variable measures the implicit benefit of physically owning metric cubes of gas compared to just holding a financial contract for them. It is a premium that varies markedly over time, often signaling tensions or imbalances in the market in advance. "It's where the most important information is hidden," Rotondi explains. "Not in the price, which is just the surface, but in the implicit value that the market attributes to having actual possession of the commodity."

A model that reads seasonality and shocks

Analyzing historical data from the Dutch TTF gas trading hub, Rotondi highlights three central features of the European market: statistical stationarity of the convenience yield compared to instability of the spot price, the frequency of sudden spikes in the former variable, and a marked seasonality linked to supply and demand cycles. From these observations comes a model that starts from the classic Gibson and Schwartz model to radically transform it: the meaningful spikes are in convenience yields, not prices. A sinusoidal function captures annual cyclicality, while a stochastic jump process simulates sudden discontinuities. The choice of a double exponential distribution to model jumps also enables the derivation of closed formulas for the pricing of futures, making the model applicable in practice.

The most difficult test: the market after 2020

The results of the study speak for themselves. The new model manages to replicate real forward curves with surprising fidelity, including the distorted curves that have emerged in the post-2020 period. Whereas traditional models fail to capture these anomalies, Rotondi's approach explains them naturally. In 2012, for example, seasonality was enough to explain the price trend. Ten years later, in 2022, things have changed: the jumps have become rarer but much more intense. Their variance, i.e. the average size of shocks, has increased almost tenfold, marking a new era for the gas market, which has become more volatile and less predictable.

Implications for investors, regulators and analysts

Rotondi's model has important practical corollaries. For investors and hedgers in energy markets, it provides a more realistic system for the valuation and pricing of gas futures and options. For regulators, it can offer a useful interpretative key in critical scenarios. And for those who are in charge of power infrastructure and gas provisioning, it becomes a tool to better assess the vulnerability of the energy system. "With this approach we can explain both the 'normal' and the 'extraordinary' behavior of the market," says Rotondi. "It's a flexible model, that is also applicable to daily practice."

Beyond gas, towards other markets

The model opens new directions for research. Its basic approach can be extended to the pricing of more complex options, and adapted to other major commodities or used to explore the behavior of other markets that are subject to frequent shocks. "We have only just begun," concludes the researcher. "But it is clear that, in order to truly read a chaotic market, you don't need to go after the noise. You need to understand what lies underneath."

Box: The paper

Seasonality and Spikes in the Natural Gas Market by Francesco Rotondi

Digital finance and regulation

Asymmetries Slowing Down Innovation by Gaia Balp

In digital financing, the lack of common rules regarding crowdfunding and crypto lending in the EU creates imbalances in credit markets and leaves funders uncovered

Text:

By using online platforms for an ideally direct match between the supply and demand of funds, digital financing redefines traditional credit relationships between loan applicants and financial intermediaries, reducing the role of banks. A different source of disintermediation comes from lending-based crowdfunding, invoice trading and crypto lending, which all make financing more flexible, efficient and accessible, and throughout the EU form the basis for the consolidation of lending platforms operating on the basis of various business models. Due to divergent national regulations, the activity of lending platforms is subject to rules that are anything but uniform in the different EU countries. The most recent EU legislation on the matter, despite having introduced a harmonized regulatory framework for digital financing, is not all-encompassing and has therefore not overridden, depending on the business model actually adopted, the need to follow provisions dictated by national regulatory frameworks, which are very heterogeneous, so that regulatory arbitrage within the Union remains possible and a true level-playing field for all EU financial operators has not yet been achieved.

The uncertainties arising from the absence of unified EU regulation are particularly evident in the case of crowdlending, in the consumer segment, and crypto lending, in the business segment.

Crowdlending collectively finances personal or entrepreneurial projects through matching portals, with the obligation of reimbursement and payment of interest by the recipient of the funds: financing decisions and financial risks are decentralized, as the platform performs a mere function of intermediation for the loan without shouldering credit risk. The EU Regulation 2020/1503 on European Crowdfunding Service Providers (ECSPs), which subjects the provider to authorization and supervision, prudential requirements, organizational and operational obligations, conduct and information obligations, and which provides for the protection of the project's funders, however, applies only to business lending. Thus in Italy consumer lending remains subject to the fragmented and unstructured provisions on non-banking savings collection (Bank of Italy, Regulation 584/2016) which, in order to prevent the manager or users of the platform from exceeding the legal reserves provided for banks and other financial intermediaries (collection of savings from the public and granting of loans), dictates criteria for customizing negotiations between lenders and borrowers, and for using separate payment accounts on the basis of the authorization to provide payment services. This is poorly functional for the activity and in any case unsatisfactory because it leaves uncovered, in terms of user protection, other profiles characterizing the service, from the assessment of the creditworthiness of borrowers and the degree of risk propensity of lenders, to information on loan risks and consequences for non-compliance.

And the ECSP regulation is not sufficient to fully cover even business lending. Some services that are in practice connected to mere intermediation, such as scoring, fund custody, flow management, are in fact not covered by the regulation, so that the relevant national legislation still applies to them. Even more unsatisfactory is the status quo regarding crypto lending, which uses cryptocurrencies as an object (against interest) or as collateral for loans (in fiat currency or other cryptocurrencies), and today is mainly carried out by centralized platforms (CeFi). The problems of giving a legal framework to

crypto lending are considerable, and are not resolved either by the ECSP regulation, from which crypto lending is completely excluded because cryptocurrencies do not integrate the relevant legal notion of lending, or by EU Regulation 2023/1114 relating to markets for cryptoassets (MiCA), as crypto lending cannot be traced back to any of the cryptoasset services contemplated therein and whose undertaking presupposes prior authorization. The fact that some crypto lenders are in any case destined to be subjected to the MiCA regime – and this, by virtue of their provision of additional, functional or complementary services to lending, thus integrating one of the services for cryptoassets subject to regulation (e.g. operating a cryptocurrency trading platform) – is nothing but an incidental response to the unresolved problem of the absence of specific and adequate regulation of crypto lending.

Negotiation

The Elements of Bargaining by Leonardo Caporarello

In an unstable and interconnected world, negotiating means building bridges between interests, cultures and technologies

Text:

In today's world, marked by geopolitical crises, rapid technological innovation and deep societal shifts, one competence stands out more than ever: the ability to negotiate effectively, whether online or in person. Yet despite its importance, negotiation remains one of the most misunderstood and underestimated skills in leadership, diplomacy and daily life.

A common misconception is to think of negotiation as a confrontational process. Too often, people enter negotiations assuming it's all about who talks louder, concedes less or claims more. This mindset is not only outdated, it's really counterproductive. Negotiation is not as a contest of power, it's a dynamic process of mutual understanding.

There are many recent events that reinforce this shift in mindset – from corporate boardrooms to global summits.

At the 2024 COP29 climate summit in Baku, nearly 200 countries found themselves deadlocked over fossil fuel phase-outs. But what truly stood out was not the impasse, it was the complexity of aligning diverse stakeholders: governments with competing energy interests, corporations facing pressure from shareholders and activists and civil society organizations demanding urgent action. The breakthrough was not any single clause in the agreement; it was the fragile consensus forged after months of interest-based bargaining, illustrating negotiation as a tool for navigating complexity rather than enforcing consensus.

This example reveals another crucial pillar of negotiation: the role of emotional and cultural differences. Effective negotiators must be more than technicians, they must be cultural interpreters. The 2024 India-UK free trade negotiations clearly illustrated this. Talks stalled repeatedly due to mismatches in communication style, tempo and decision-making hierarchy. Indian officials prioritized long-term relationship building, while their British parties pushed for quicker, more transactional outcomes. The deal did not fall apart due to economic disagreements, but due to misaligned expectations grounded in cultural norms.

In this complex landscape, digital technologies play an important role. There is no doubt that digital transformation has expanded the scope of negotiation. We now live in the age of phygital negotiation, a hybrid of physical and digital exchanges. This format has allowed negotiations to continue across borders and time zones.

A case in point: the 2022 Ukraine-Russia mediation efforts, facilitated by Turkey, involved both in-person meetings and encrypted virtual channels. This blended diplomacy proved essential in maintaining communication amid high tensions and logistical challenges. While technology can enhance communication, it cannot replace the trust and empathy that come from genuine human interaction.

Supporting the continuous process of building trust among the parties, data and evidences are essential. While data are so important in modern negotiation, they are only part of the equation. Negotiation is not a spreadsheet exercise, it's a human one. Alongside emotional and cultural intelligence, the psychological dimension is equally powerful, and often overlooked.

Cognitive biases shape how we perceive offers, risks and concessions. Consider anchoring, where the first number proposed in a negotiation sets the tone for everything that follows. Or the endowment effect, where we irrationally overvalue what we already possess. These biases routinely distort outcomes. Skilled negotiators understand this, and plan for it.

But awareness is not enough. We must actively reframe proposals and manage perceptions to correct for bias. This includes designing concessions that feel fair, sequencing offers strategically, and presenting proposals in ways that reduce psychological resistance. And perhaps most importantly, it requires emotional intelligence, not to suppress emotions, but to recognize, interpret and respond to them. Emotions like anxiety, pride, joy and disappointment are not distractions: they are part of negotiation dynamic.

Technology plays a role in managing such complexity. Artificial intelligence is already in the negotiation room. From scenario simulations to predictive analytics, AI tools are helping negotiators prepare more strategically than ever before. For example, they can analyze the other party's behavior, model likely outcomes and stress-test alternative strategies, all before the first conversation even begins.

But technology, no matter how advanced, cannot replace the fundamentals. Empathy, credibility and adaptability remain human skills, and they are still the most decisive factors at the table.

Ultimately, negotiation is not just about business deals or diplomatic accords. It is about shaping the future we share. Whether the issue is climate, trade, public health or peace, forward movement depends on the ability to engage constructively with others, across divides, under pressure and in the face of uncertainty.

Box: The book

Negotiation isn't just a skill – it's an art that can transform every aspect of your personal and professional life. In this book, Caporarello provides a comprehensive roadmap to mastering the complex world of negotiations. More than just a guide, *"Let's Negotiate"* is an interactive journey that challenges you to reflect, learn, and grow. With its innovative approach combining theory, practice, and personal development, this book will equip you with the confidence and skills to turn every negotiation into a pathway to success. (Bocconi University Press, 2025, 120 pages, €32,30).

Workplace

Returning Employees Are Not Always a Blessing by Thorsten Grohsjean

Companies are rehiring old employees because they have experience and can be quickly brought up to speed. But if they neglect team dynamics, so-called boomerangs can be a hindrance rather than a boost

Text:

In today's fluid labor markets, it is increasingly common for employees to leave a firm, gain experience elsewhere and then return. These returning employees – called "boomerangs" – appear to offer an appealing mix of familiarity and fresh perspective. But does bringing them back really work?

Recent research, published in Organization Science, explores what happens when boomerangs re-enter their old teams. Using data from over two decades of National Basketball Association (NBA) games, we analyzed a concrete and consistent form of help among teammates: the assist – a pass that leads directly to a score. This offered a rare window into real-time, high-stakes collaboration between returning and incumbent team members.

What we found challenges conventional assumptions about rehiring. Boomerangs are, as expected, more helpful than true newcomers. They assist more often – not just to their old colleagues, but also to new ones who joined during their absence. Yet, the surprising twist is that this help is not always reciprocated. Incumbents – especially former teammates – are less likely to help returning colleagues than they are to assist brand-new hires.

Why the imbalance?

Boomerangs tend to hit the ground running. They already know the organizational culture and, often, the people. This familiarity allows them to focus quickly on building – or rebuilding – working relationships. Boomerangs also appear especially motivated to prove their worth, perhaps to reestablish credibility or mend any relational damage left by their earlier departure. The result: higher levels of proactive cooperation.

However, incumbent reactions complicate the story. You might expect old colleagues to welcome boomerangs back with open arms, but that is not always the case. Our data suggests that former teammates assist boomerangs less than they do newcomers. This may reflect lingering resentment, perceived betrayal or simply discomfort over altered group dynamics. New incumbents – those who never worked with the boomerang before – also extend less help to returning colleagues than to first-timers, perhaps unsure of where the boomerang fits in the pecking order.

These dynamics matter. In knowledge-intensive, interdependent work environments, performance hinges on collaboration. When help is one-sided, the integration of returning employees – and the potential productivity gains – can falter.

So what should managers do?

First, don't assume a smooth re-entry. While boomerangs may bring strategic advantages – shorter onboarding, internal familiarity and proven performance – they can also disrupt the social fabric of a team. Be alert to the possibility that old relationships aren't as sturdy as they seem.

Second, support reintegration deliberately. Encourage two-way dialogue and mutual expectations between boomerangs and their teammates. Don't leave it to "muscle memory" or nostalgia. Just because someone used to belong doesn't mean they'll be embraced anew.

Third, manage perceptions. Help incumbent employees understand why the boomerang was brought back and what they can add now. If colleagues feel sidelined or threatened, cooperation will wither.

Lastly, consider timing. The longer a boomerang was away, the more their return resembles a new hire. Tailor onboarding and social integration efforts accordingly.

Boomerangs are neither saviors nor saboteurs by nature. Their effectiveness depends less on their individual attributes and more on how their return reshapes team dynamics. Organizations that welcome back old faces should be just as intentional about reintegration as they are about recruitment.

Because, as it turns out, going home again is not quite as simple as it seems.

Box: The paper

Can You Go Home Again? Performance Assistance Between Boomerangs and Incumbent Employees, by Thorsten Grohsjean, Gina Dokko, Philip Yang

Digital wealth and taxation

How to Tax Digital Multinationals (Without Breaking the System) by Amedeo Rizzo

In an unstable international context dominated by Big Tech, AI and global trade tensions, new but fair rules are needed to put levies on digital wealth without stifling its growth

Text:

The traditional tax system, based on the taxation of multinationals where value is produced, has gone into crisis with the advent of the digital economy. For over a decade, international organizations such as the OECD and the G20 have joined in the attempt to close the tax evasion loopholes linked to the legislative gaps in some systems and the absence of taxation in others, seeking to find an agreement on the allocation of the taxable income for multinational companies operating in the digital sector. Yet, despite ostensibly broad political consensus, a technical solution capable of satisfying all the various national interests has not yet been found.

A bargaining equilibrium point was the OECD-based global minimum tax, already adopted by the European Union and many other nations, with the aim of taxing all large multinational companies at an effective rate of at least 15%. In countries like Italy, however, compliance costs for companies sometimes exceed perceived tax benefits, and the effectiveness of the measure is curtailed by the absence of two key players, the United States and China. Another OECD proposal, aimed at reallocating part of the profits of multinationals to the countries where users and consumers reside, in order to reflect the added value they provide in the value chains of digital companies, is stalled. This multilateral vacuum has pushed many jurisdictions to adopt unilateral solutions, such as a digital services tax on revenues of technology companies. Such tax, however, is a cause of trade frictions with countries where Big Techs are based. Emblematic of this is the US federal bill, the so-called “One Big Beautiful Bill”, which in Section 899 calls for the black-listing of certain foreign DSTs and surtaxes of up to 20% on their income, flanked by the reactivated arsenal of tariffs as per ex-Section 301. Fiscal diplomacy thus becomes a tool of industrial policy, aggravating transatlantic tensions.

Generative Artificial Intelligence (AI) adds further complexity. Fiscal doctrine and policy-makers propose to tax algorithmic value chains, allocating the taxable amount based on the origin of the data used for training machines and local queries: an informational nexus which would complement physical presence. The Italian tax authority is in the vanguard, anticipating a pay-for-access model that values data as economic equivalent within the scope of VAT legislation, thus recognizing the exchange of “data for free services” as a taxable exchange. At the same time, AI also works to serve controls. In fact, machine learning can be used to identify incorrect behavior by taxpayers, for example by cross-referencing data relating to turnover, payment flows and network metadata. However, all this clashes with the limits set to government intrusion in personal data set by the GDPR, the AI Act, and domestic regulations on the protection of fundamental rights, which create a tradeoff between tax effectiveness and taxpayer protection.

In this scenario of great uncertainty, companies react through a form of strategic compliance, which involves collaboration with tax authorities, focusing on preventive dialogue with them to reduce uncertainty and sanctions, and investments in tax technology, thus transforming “fiscal data” – previously only recognized in terms of pure compliance – into a potential competitive asset.

We are therefore observing a rapidly evolving regulatory framework. The challenge for the future is to design an innovative tax system that is consistent with principles of equity,

neutrality and proportionality, and manages to impose levies on the new digital wealth without stifling its expansion, so as to support social cohesion at a time when the revision of multilateral trade and fiscal relations has become paramount.

The author

Learning Is Human Work by Diane Orze

In his book, The Skill Code (Egea), Matt Beane shows how technologies and organizations can evolve to not only do better, but also help us learn better. Together

Text:

We are moving faster – but maybe in the wrong direction. In the age of Artificial Intelligence, as technologies promise greater efficiency and precision, we are quietly dismantling the way humans have always learned: by working alongside those with more experience, practicing, making mistakes and trying again. “You don’t become an actor by watching movies,” warns Matt Beane, a leading expert on workplace learning and author of The Skill Code (published in Italy by Egea). A faculty member at UC Santa Barbara, Beane argues that we are not just losing skills – we are losing the ability to learn itself. And he offers a sharp reminder: “The future belongs not to those who can work fastest alongside AI, but to those who can learn fastest with each other.” His call is urgent: we must redesign our technologies and institutions before efficiency erodes what makes human intelligence thrive.

Professor Beane, what sparked your decision to write The Skill Code? Was there a specific moment, story or experience that made you realize we’re losing something fundamental in how we learn?

The turning point came during my fieldwork in robotic surgery operating rooms. I watched Kristen, a talented surgical resident, struggle helplessly as her attending surgeon operated a thousand-pound robot from fifteen feet away. She was relegated to watching, essentially becoming a spectator in her own training. Then I met Beth, another resident in the same program who was thriving. The difference wasn’t talent or background; it was that Beth had figured out how to learn despite the system, not because of it.

That contrast haunted me. Here was cutting-edge technology that promised better outcomes for patients, but it was quietly dismantling one of humanity’s oldest and most effective learning mechanisms: the expert-novice bond. I realized we were facing a massive, largely invisible crisis in skill development that would affect every profession touched by intelligent technology.

Your book begins with a vivid scene – a tinsmith and his apprentice – and later moves through robotic surgery rooms and e-commerce warehouses. What do these seemingly unrelated worlds have in common?

They all depend on the same fundamental learning architecture that humans have relied on for millennia: novices working alongside experts, gradually taking on more complex challenges in a relationship built on trust, respect and care. Whether you’re learning to shape metal, perform surgery or optimize warehouse operations, the core pattern is identical.

What’s fascinating – and alarming – is how intelligent technologies disrupt this pattern in remarkably similar ways across completely different domains. The robot in surgery, the AI in law firms, the algorithms in warehouses – they all create the same problem: they make experts so efficient that novices get pushed to the sidelines. The tinsmith’s apprentice gets hands-on practice; the surgical resident watches from across the room.

You identify three essential "building blocks" of skill development: challenge, complexity and connection. Which of these do you think is most at risk in today's workplaces?
Connection is definitely the most vulnerable, and that's what makes the current situation so dangerous. Challenge and complexity can sometimes be engineered back into work, but connection – the human bond between expert and novice – is incredibly fragile and hard to rebuild once it's broken. When an expert can accomplish their work faster and more efficiently with AI assistance, the natural incentive is to do exactly that. Why slow down to involve a struggling novice when the algorithm never makes mistakes and works at superhuman speed? The expert's productivity soars, but the novice becomes invisible. Without that connection, there's no one to provide the scaffolding that makes challenge and complexity productive rather than overwhelming.

How exactly are intelligent technologies disrupting the transmission of skills between experts and novices, often in subtle, unnoticed ways?
The disruption is so subtle because it doesn't feel like a loss – it feels like pure gain. A senior lawyer reviews documents 10x faster with AI assistance. A surgeon operates with unprecedented precision using a robot. A banker analyzes markets with algorithmic tools that junior staff could never match. But here's what we miss: in the old system, that junior lawyer gained expertise by helping with document review. The surgical resident learned by handling increasingly complex parts of operations. The junior banker developed judgment by working through market analysis alongside their mentor. When intelligent technology makes the expert self-sufficient, these learning opportunities evaporate. The cruel irony is that everyone involved – experts, organizations, even the novices themselves – often sees this as progress. The work gets done faster and better, costs go down and efficiency metrics improve. But we're systematically eliminating the learning pathway that created those experts in the first place.

Is there a particular example from your field research that captures this disruption clearly? I'm thinking of the story of Kristen, the surgical resident.
Kristen's story perfectly captures this hidden tragedy. She's brilliant, hardworking, from a top medical school – everything you'd want in a surgeon. But when she encounters robotic surgery, the technology makes her attending so capable that there's literally no room for her to learn. She spends four-hour procedures watching from the sidelines, maybe getting fifteen minutes of low-stakes cutting time while her mentor barks corrections across the room. When Kristen finally operates independently, the results are devastating: what should take three hours takes seven, patients lose ten times more blood and everyone in the OR is tense. As her chief of surgery told me with brutal honesty: "These guys can't do it. They haven't had any experience doing it. They watched it happen. Watching a movie doesn't make you an actor."

That quote has stayed with me because it captures the fundamental delusion we're living under: that observation equals learning, that efficiency equals progress, that technology inherently makes us better.

One of the most compelling parts of the book is your discussion of "shadow learners" – people who manage to learn despite institutional barriers. What can we learn from these deviant figures?
Shadow learners are our canaries in the coal mine: they show us both the extent of the problem and the path forward. They've figured out how to restore challenge, complexity and connection in environments that systematically eliminate these elements. Take Beth, the surgical resident who thrived. She didn't accept the formal training pathway. Instead, she cut anatomy labs to spend time in actual operating rooms, landed research roles that gave her hands-on robot experience and spent hundreds of hours analyzing surgical

videos when she should have been sleeping. By the time she entered formal residency, she looked competent enough that attendings trusted her with real responsibility. What shadow learners teach us is that the three Cs – challenge, complexity, connection – are more fundamental than any particular institutional arrangement. When formal systems fail, determined individuals will find underground ways to access these essential elements of learning. Their tactics give us a blueprint for designing better systems.

In a way, Beth – the surgical trainee who thrived by breaking the rules – is a heroic figure, but also a warning. Should we really depend on exceptions to fix systemic training failures?

Absolutely not, that's exactly the trap we need to avoid. Beth's success is inspiring, but it's also profoundly unjust. She succeeded through a combination of exceptional determination, rule-breaking that could have ended her career, and frankly, luck. One in eight residents in her program managed similar success. What about the other seven? Shadow learning solutions are "semi-ethical hacks that wouldn't scale," as I put it in the book. Beth's tactics strained the bounds of propriety, required enormous personal risk, and operated in isolation from official channels. Imagine if she could have been open about her learning strategy, if attendings could have properly guided her rule-breaking, if institutions could have learned from her innovations.

The real solution isn't to celebrate individual heroics – it's to systematically redesign our institutions and technologies to support the kind of learning that shadow learners fight so hard to achieve. We need to democratize access to effective learning, not depend on a few exceptional individuals to overcome systemic failures.

You point out that most training investments still go into formal education, rather than cultivating expert-novice relationships. What should companies do differently to reverse this trend?

Organizations need to flip their entire perspective on learning from an expense to be minimized to an investment to be maximized. Right now, most companies see novice involvement as inefficiency: why have a junior person slow down the expert when AI can help them work faster? The answer is to start measuring and rewarding skill transmission alongside productivity. Imagine if expert performance reviews included how effectively they developed novices. If project timelines built in learning objectives. If technology implementations were evaluated not just on efficiency gains, but on their impact on capability building. Practically, this means creating what I call "learning-rich" work arrangements: pairing experts with novices on challenging projects, designing AI tools that enhance rather than replace human collaboration and building career advancement systems that recognize mentoring excellence. Some companies are already experimenting with "reverse mentoring" programs where junior employees teach seniors about new technologies while learning domain expertise in return.

Have you come across any inspiring examples of AI or robotics being used not to replace skills, but to enhance their development?

Yes! One of my favorite examples comes from bomb disposal robots versus surgical robots. Both are sophisticated technologies, but they've evolved in completely different directions for skill development. Bomb disposal robots remain deliberately "clunky": they require human skill, judgment and experience to operate effectively. A novice can't just jump in and defuse bombs; they need extensive mentoring from experts who work alongside them, building capability gradually. The technology amplifies human skill rather than replacing it. In my current research, we're developing AI systems that help surgical residents learn faster by intelligently curating and organizing surgical videos, allowing experts to give assignments and feedback in new ways. Instead of replacing the expert-

novice bond, the AI strengthens it by providing new channels for challenge, complexity and connection. The key insight is that we can design technology to require and develop human skill rather than eliminate it. But this requires intentional choices about how we build and deploy these systems.

Box: The book

"Il Dna delle competenze" (Egea, 2025, 216 pages, €28, in Italian), by researcher and technologist Matt Beane, reveals the hidden code that lies behind every successful relationship between an expert and a novice. Over the past decade, Beane has explored this unique bond across a wide range of environments, from warehouses to operating rooms. He has found that - just as four amino acids form the building blocks of DNA - challenge, complexity and connection are the core components of how we develop our most valuable skills.

Colophon

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Editor-in-Chief

Editorial Office

Translation and revision

Contributors

Paolo Tonato (photographer), Michele Chicco, Piero Masotti

Secretariat

Layout project

Luca Mafechi, mafechi@dgtprint.it

Production

Luca Mafechi

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