

This document is based on the first roundtable of the Institute Louis Bachelier Risk Forum 2026, titled "Hidden Financial Risk," which took place in the Salon d'Honneur of Palais Brongniart in Paris. The title of the roundtable was "*Measuring Geopolitical Risks And Their Impact On Investment And Financing Portfolios*" immediately following a presentation by Professor Matteo Iacoviello (Federal Reserve Board). The discussion has been moderated by **Charles-Albert Lehalle**, Professor at the Center of Applied Maths (CMAP) of École Polytechnique, Institut Polytechnique de Paris, which explores the intersection of **geopolitical risk and financial risk**. The discussion focuses on how institutions can monitor geopolitical narratives and use specific indicators to protect the financial system from global instability.

The panel features four experts who address the following key elements:

- **Systemic Vulnerabilities: Dorothée Rouzet** identifies major "pockets of risk," including high valuations and concentration in **US Tech and AI**, record-high **public debt**, the rapid growth and leverage of **non-bank financial intermediaries (NBFIs)**, and the escalating threat of **cyber risk**.
- **Propagation through Global Value Chains: Sébastien Jean** analyses how geopolitical shocks travel through complex production networks, emphasizing that geopolitical risk is **endogenous** — driven by the strategic calculations of actors — and is increasingly characterized by market fragmentation due to export restrictions.
- **The Science of Risk Indicators: Anna Simoni** discusses the technical challenges of using **alternative data** (market-based, text-based, and macro-based) to build indicators, highlighting the role of **Machine Learning and AI** in extracting meaningful signals from high-dimensional, "noisy" datasets.
- **Practical Asset Management: Julien Pincet** offers insights into how portfolio managers must adapt, moving towards new diversification strategies that prioritise **supply chain sourcing** and addressing operational risks related to **sovereign custody** and the role of Central Securities Depositories (CSDs).



The discussion concludes with a reflection on the evolving role of data, noting a shift from traditional forecasting toward **foresight and scenario-based modeling** as the global economy continues to adapt to new forms of disruption.

TRANSCRIPTION OF THE ROUNDTABLE

I am **Charles-Albert Lehalle**, professor at **École Polytechnique**, and I will try to guide the panelists through this question about geopolitical risk and financial risk – and how they go together.

Of course, performing the kind of monitoring of narratives that has just been shown to us is very important. However, from a financial perspective, understanding how it affects the markets and how these kinds of indicators can be used as a diagnosis to protect banks and institutions from geopolitical risk is another story.

This is what we will explore with our attendees. You already know **Dorothee Rouzet**, who is Chief Economist of the **French Treasury**.

I've been joined by **Sébastien Jean**, Professor of Economics at **Conservatoire National des Arts et Métiers** (CNAM) in Paris and a member of **CAE** (Conseil d'Analyse Économique). He is also Associate Director with **IFRI** (Institut français des relations internationales), where he is in charge of the Geoeconomics and Geofinance Initiative.

We also have **Anna Simoni**, who is Senior Director at **CNRS-CREST** and Professor of Econometrics at **ENSAE** and **École Polytechnique**.

And we've got **Julien Pincet**, who is the Head of Research for the Geofinance project at **Institut Louis Bachelier**.

So, with them, we will try to link together geopolitical risk and financial risk. I will start by asking you: if we want to understand the potential impact of geopolitical risk on the financial system, what would be the first topics or items you would look at and draw our attention to?



Dorothee Rouzet

Let us start with the fact that we are living through a period of very intense geopolitical tensions, and yet, at the same time, the reaction of financial markets has overall been fairly benign.

This disconnect may suggest that imbalances are accumulating in portfolios — specifically leveraged portfolios — that we are not really fully seeing yet.

The other puzzle is that since last year, we've also seen certain asset classes not behaving the way they usually do. Of course, by that, I am referring to the **dollar** weakening, even during some **risk-off** episodes, and weakening after the imposition of **tariffs**, where economic models would have predicted the opposite. We have also seen **gold** sometimes appreciating in periods of risk appetite and some indication that the **dollar** may have slightly lost its status as the absolute **safe haven**, and that there is increased demand for hedging against the dollar. Therefore we see some foundations and very well-established relationships shaking a little bit, and that's already a cause for concern.

Now, if I'm answering your question more directly: what would be the pockets of risk I would look at? I think we have to think of geopolitical risk first as an **amplifier**. So, where there are existing **fragilities**, we must ask: can geopolitical risk be a trigger for a correction, or act as an amplifier where there is pre-existing risk?

I would highlight four domains. The first one is the very high valuation in **US Tech**, and especially the **US AI sector**, along with very high concentration. Of course, it's not geopolitical risk itself that is raising doubts about whether these models are fully sustainable, or whether the massive investment by **hyperscalers** — increasingly financed by debt, and increasingly by **private debt** and **private credit** — is sustainable.

These are sensitive to volatility in the market, and therefore geopolitical developments could be an accelerator or trigger of a correction. This is especially true when we consider that we are living in a world in which dependencies can be weaponized – including dependencies in **chips** and **rare earths**, which are critical, of course, to the tech sector.

Number two, I would list **public debt levels**, which are reaching record highs, including in the US. Of course, **sovereign yields** are quite sensitive to the evolution of geopolitical risk and geopolitical conflicts. We have seen a **steepening of yield curves**, reflecting high uncertainties around fiscal trajectories and the economic impact of geopolitics.

Perceptions of sovereign risk are an area to be closely scrutinized, especially as this is happening at the same time as geopolitical tensions lead to lower growth and, crucially, a high need to spend and invest in **defense** and **industrial policies** for sovereignty concerns. So, spending pressures are going up at the same time as there is more volatility in sovereign risk perception.

Number three, I would list the rapid growth of **NBFIs – non-bank financial intermediaries**. This has for long been a cause for concern, but the specific worry now is not only the high level of leverage, but the increased interconnectedness with the rest of the financial system and the other pockets of risks I just mentioned.

We see the strategies of some NBFIs, especially **hedge funds**, relying heavily on the dynamics of sovereign debt. These can interfere with what I just said about the geopolitical context being a potential source of volatility in sovereign debt markets.

Fourth, last but not least in my list of top concerns, I would put **cyber risk**. This is, of course, a primary source of **operational risk** for the financial system, which is especially vulnerable to increasingly sophisticated cyber threats.

We saw the number of cyberattacks rise quite significantly last year, and geopolitical conflicts are contributing to this resurgence of **hybrid warfare** operations, which can manifest themselves as cyber risk for us. Thank you.



Sébastien Jean

Charles-Albert Lehalle: *Thank you very much Dorothée. So, now you have an idea of the targets that could be affected by geopolitical risk within the financial system. We are talking about risk, but risk is often difficult to define in general. We can, however, observe geopolitical events and how they **propagate**, because they carry consequences that are very often unintended.*

*I remember when the war in Ukraine started, I learned that Ukraine was a major producer of **fertilizers**. And now, with what is happening in **Iran**, I've learned that **Bangladesh** is one of the main providers of goods to Europe; they require energy for production, and where does that energy come from? It comes through the **Strait of Hormuz**.*

*This kind of propagation in so many directions is something that is very difficult to fully grasp. So, **Sébastien**, perhaps you can give us your opinion on how we have seen this kind of propagation manifest.*

Sébastien: Thank you. Yes, we are living in a world where **global value chains** (GVCs) are widespread — they are everywhere — and we know that they are far from neutral in terms of their direction. Indeed, they act as a channel for the **propagation** of a variety of shocks, and this channel can be fairly complex to understand.

It is also quite well-established that in these kinds of very complex networks — as the world production network is right now — you frequently have truly **critical nodes**, or critical hubs, if you like.

So, even when you have a very large number of providers and producers, it is very common that within a complex network you have a few key players. This is especially obvious in the electronics industry, for instance; you have tens of thousands of producers, and yet you easily observe **quasi-monopolies** in key dimensions – such as **TSMC** for **foundry** services, or **ASML** for **lithography** machines, and so on.

There is a kind of paradox in having such an incredible diversity of actors while simultaneously relying on extremely critical, singular actors. Now, I think it is also the case that this is not new; we have been living in a world characterized by widespread global value chains for quite some time now.

The examples of the propagation of shocks linked to the **Tōhoku** earthquake and tsunami in 2011, or the floods in Thailand that same year, have been widely studied. They have been shown to disrupt production on the opposite side of the world in some cases.

And somehow, there is nothing new here. It is important and very difficult to fully understand, but it is not new. The intensity of these links has more or less plateaued since the Global Financial Crisis, if we refer to statistical measures.

Now, what I think is also interesting to emphasize is the incredible resilience of this networked world economy. We have been witnessing a lot of 'announced' catastrophes that are still waiting to happen. Take the '**Liberation Day**' announcement and the disruptive **Trump trade policies**; they were described as potentially catastrophic. And yet, look at the growth of world trade volume in 2025 – the figures aren't definitive yet, but they will probably be larger than **4%** in volume. So, world trade is doing fine, thank you very much.

Take **COVID**; even then, the disruptions were absolutely terrible, but when you look back with hindsight, I think it is truly astonishing how well the world economy reacted and how resilient it has been. Contrary to what is frequently said, the industries most dependent on global value chains have not been the most fragile. On the contrary, I think they have been the ones reacting best to these challenges. Think about how many masks we could have produced in France had we not been integrated into this international division of labor; I think you realize that we could never have produced as many as we ended up using at the time.

Now, I think it's also important to think differently about geopolitical risk and ask: what is special about it? Is it just about propagation? No, I think it's also about the **nature** of the risk.

First, of course, it is an additional risk linked to geopolitical tensions that are largely **exogenous** to the economic sphere. But it is also a different risk in terms of its genesis, mainly because it is linked to a **strategic calculus** – to an interaction between partners.

The probability of this risk occurring is itself **endogenous**, because it is linked to the way a partner, or an enemy in some cases, will evaluate the **cost of disruption**. I think that is profoundly different from an earthquake, or even from the economic cycle.

It is really important to think about the probability distribution of this risk as something deeply endogenous, linked to this interaction between players. Of course, this raises questions about the precisely calculated 'cost of disruption'. By the way, I think this is very important: the cost of disruption is not just 'minus the gains from trade.' It is very different. Some steps in your production can be very small in terms of value, yet the cost of their disruption can be very large

Think about **rare earths**, for instance. The annual value of Chinese rare earth exports is only a few billion dollars; on the scale of world trade, it is almost negligible. And yet, we see the immense power of export restrictions on rare earths as a geopolitical tool and a source of political leverage.

This points to different factors we must monitor when assessing risk: the diversity of producers, the possibilities for substitution, and the true 'cost of disruption'.

To conclude, I think another interesting dimension of geopolitical risk is that it is making a once-seldom-used instrument more common: **export restrictions**. These are particularly interesting because they lead to a **fragmentation** of world markets. For a long time, they were used almost exclusively in relation to the non-proliferation of weapons of mass destruction – very narrowly defined.

Now that they are more common, they have significant consequences – specifically, a **rigidification** and fragmentation of global supply. This limits the 'degrees of freedom' of world production when faced with shocks. In this case, it's not just about geopolitical shocks themselves; it's that geopolitical constraints are reducing the **adjustment capacities** of the world economy.

This was very obvious in the semiconductor industry following COVID. That was a time when the Trump administration, and the Biden administration afterward, applied very strong export restrictions on semiconductors to China. I think this contributed significantly to the 'chaos' in that industry. The difficulty in coping with the sudden surge in demand was not caused by geopolitics — the surge itself was market-driven — but the industry's capacity to adjust was severely reduced by those geopolitical constraints. Thank you.



Anna Simoni

Charles-Albert Lehalle: *So, thanks to Sébastien we see that the way events propagate is **multiscale** on a network. This is something very sophisticated: it is multiscale in **time**, with different time horizons because actors are constantly changing their views and reacting to what is happening. But it is also multiscale in terms of **geography**.*

Marie Brière mentioned, during the opening of this Risk Forum, alternative data, which is potentially very useful for understanding these hidden risks. So, the question is: how do we technically — and scientifically — build indicators using this collection of data that are available at different time scales and across different regions, often without perfect synchronization? How can we do that?

Anna, the question is for you.

Anna: Thank you, Charles-Albert, for this question.

Indeed, we have many types of alternative data available nowadays. There are different risk indicators that we can classify into three main categories: **market-based**, **text-based**, and **macro-based** indicators.

I would like to point out that these different indicators are not just alternative measures of the same object; they actually embed different representations of the way the economy works and the way risk propagates.

For instance, let's look at market-based indicators. These indicators are high-frequency and forward-looking, and they capture changes in financial conditions very well. However, other risks — such as disruptions in the supply chain — are only captured indirectly by these indicators, specifically through how the risk affects asset prices or investor expectations.

If we move to text-based indicators, they take a different approach from market-based ones. This is what we saw in the presentation by **Matteo Iacoviello**. These indicators use information from news and narratives. In this sense, by construction, they capture a multi-channel propagation in terms of content; they provide information regarding the type and the origin of the shocks.

However, they don't necessarily provide information in terms of the underlying model. That is to say, they don't model the physical structure of the propagation — the network structure that characterizes how shocks actually travel through the economy.

This type of indicator is known to be noisy, as we have just learned from the presentation by **Matteo**. The point is not that the approach itself is noisy, but rather that the **raw data** are noisy. What is particularly interesting in the contribution of the paper just presented by Matteo is that by using appropriate methods, like **AI** and **LLM** (Large Language Model) methods, we can extract the signal. We can reduce the noise and obtain a signal that is less volatile.

Now, we have a third type of risk indicator: **macro-based** indicators. These are constructed using macroeconomic data or surveys. These indicators — for instance, measures of **uncertainty** — are very useful for assessing the impact of these shocks on the economy as a whole. They help assess the **aggregate impact**, such as the effect on GDP, employment, or investment.

The characteristic of these indicators is that they are **low-frequency** — typically monthly or quarterly. They become available with a delay after a shock occurs, and they provide aggregate information.

If we go back to **global supply chains**, they form a network of interdependencies across countries and sectors where shocks propagate depending on 'who is connected to whom.' The point is that all these traditional indicators don't really capture this network structure because they don't incorporate the modeling of the network into the construction of the indicator.

Overall, the methodology used to construct these risk indicators is vital because it impacts what we can actually see through these indices regarding specific parts of the economy or types of shocks. This naturally leads to a second question: can we combine all these sources of information and alternative data used to construct these various indices? Can we combine them to create something coherent and informative about global supply chains? I believe this is where **high-dimensional data** and **high-dimensional methods** play an important role.

So, high-dimensional methods — like **Machine Learning** or **Artificial Intelligence** — are essential. As I mentioned, the signal is there, but the data are so rich that the signal is hidden in this immensity of information. The risk is that we get lost and lose the signal entirely; therefore, we need to use appropriate methods, such as **selection**, **shrinkage**, or **factor models**, in order to extract a meaningful signal.

I encountered this issue in my own work when using **Google Search data** with **Laurent Ferrara**. We had an ultra-high-dimensional dataset, and the challenge was to extract relevant information. In our case, the goal was to **nowcast** GDP. We wanted to obtain information that was not only meaningful but also relevant and **interpretable**. This is related to what is known in the macroeconomic literature as **targeted selection**: when we have very rich alternative datasets, we must first select the variables that are truly useful for the specific subject we want to study.

The second point is how we should aggregate data — or whether we should aggregate it at all — in terms of frequency. This brings us to the question of **mixed frequency**. When we have a rich dataset, we are dealing with different frequencies: for instance, we might have monthly, quarterly, weekly, and daily data. How do we mix this information?

The simplest approach is to aggregate everything at the lowest frequency, but while that is easy, the risk is that we lose vital information. Alternatively, we can develop more advanced methods — like **MIDAS** or state-space models — to exploit high-frequency information and work at that level.

To conclude, I think that overall, we are moving from a world where we summarise risk with single indicators to one where we need to integrate multiple **heterogeneous signals** into a coherent framework. This requires both technical challenges — in Machine Learning and AI — and conceptual challenges, because we want methods that work but remain **interpretable**.

Julien Pincet

Charles-Albert Lehalle: *Thank you very much for this insight Anna. With these first three interventions, we now know the weaknesses of the financial system thanks to **Dorothee**; we know how these geopolitical events propagate thanks to **Sébastien**; and with **Anna**, we have hope that we can build indicators for all of this. That could lead to a fantastic dashboard.*

Julien, *I will ask you the next question. As a former asset manager, if you had this dashboard, what could you do? In statistics, the saying is: 'Learn to understand, understand to act.' It means that if your analytics are not pointing to actions, you end up with a 'Christmas tree effect' – you have red lights*

*flashing everywhere, but you don't know what to do. When you are a portfolio manager, what kind of actions can you take facing geopolitical risks? Does **hedging** make sense? Does **diversification** still have meaning today in the face of geopolitical risk?*

Julien: Okay, I'll do my best to answer that question, which is not an easy one. As we've seen, geopolitical shocks and tensions introduce new risks that require new methods of diversification — or at least additional, complementary ones — and the same applies to hedging, when it's doable.

A first distinction can be made between assets based on whether they are **movable** or **immovable**. For example, **real estate**: if you are a foreigner invested in Russian real estate or Gulf real estate, you are essentially fully impacted and cannot do much once a conflict breaks out.

When you invest in an **issuer** — let's say a company — that is an intermediate case. A company cannot completely or radically change its entire activity overnight, but it can adjust it over time. As Sébastien explained, we saw some very strong adjustments and adaptations in the wake of the invasion of a significant part of the Ukrainian territory by Russian troops.

Among the highly movable assets, you have those with manageable logistics, like raw materials. Concerning investments in issuers — whether equity or bond securities — the traditional criteria for diversification have typically been: first, the sector or activity; second, the geographical breakdown of sales; and third, the yield curve and the corresponding maturities of expected future cash flows.

With geopolitical tensions, you now absolutely need to add a dimension that, while always present, has become critical since the Russia-Ukraine crisis: supply chain and procurement risk. Investors now need to look far more carefully at sourcing – mapping the risks involved and evaluating how they can be addressed.

This also requires issuers to communicate much more on these criteria. We've seen with the rise of ESG over the last 25 years that companies began to manage sourcing and labor more cautiously; we are now seeing the same trend in 'geopolitical sourcing' and energy sovereignty.

Charles-Albert Lehalle: *So, with ESG, you are thinking about Energy Sovereignty and Geopolitics?*

Not really... In addition to these criteria, there is the huge upheaval that Dorothee mentioned: the confluence of geopolitical risk with sovereign fiscal situations. For decades, Western states enjoyed a high degree of fiscal stability. That started to change significantly in 2008, and COVID added additional layers of debt.

Sovereign paper issued by states like Germany, France, or the US used to be the 'basket of risk-free assets,' at least for short-term paper. Now, with the evolution of fiscal situations and the risk of sanctions, it's different. The perimeter of a 'genuine' risk-free asset is fast decreasing. In such an environment, low-risk wealth preservation — already historically demanding in its own right — takes on an altogether new layer of complexity.

The future will tell to what extent such a market for wealth preservation develops. Another part of geopolitical risk for asset managers concerns their own operational activity: the way they manage funds, buy and sell securities, and — crucially — how they custody them. This is where we see the vital role of **Central Securities Depositories (CSDs)** and **custodians**.

Generally, when you buy a stock or bond, the final depository is a CSD. Normally, there is only one for a specific security. For example, if you buy an **Air Liquide** share on **Euronext Paris**, it is ultimately deposited at **Euroclear France**, formerly Sicovam.

But when you buy a foreign security, it is different. Your custodian will use the services of a **sub-custodian** in the other country, which in turn holds the security on your behalf at that country's local CSD—for example, **SIX** in Switzerland or **Iberclear** in Spain (now part of the SIX Group following its 2020 acquisition of BME).

In this context, the asset manager is confronted with a diversity of risks depending on the client. For a French client investing through **Amundi** or **BNP Paribas Asset Management** in a French-law fund (rather than in a Luxembourg-law one) invested in French securities, the entire chain is 'sovereign' and purely French. But if the customer is Chinese, for example — and these companies have Chinese customers — they may have very different requirements. They might be very attentive to the mandates and the rules regarding where their assets are held. In the coming years, we could see significant evolutions in the contracts and clauses governing these arrangements.

We also see this in the different ways of holding **Gold**. You can own physical gold as a private person or an institution, but you have a choice of where to store it. Is the warehouse in the country of the investor, the country of the asset manager, or a third country? If you are based in a country that could be invaded, you might think it is a good idea to store the bulk of it elsewhere.

In the 1930s or during the Cold War, some European central banks decided to store part of their gold in the US. However, decades later, if you are less 'trustful' about your partnership with the US or you think the probability of being invaded has decreased, you might decide to repatriate it. This is a movement we have seen with the **Bundesbank** over the last 15 years.

Finally, regarding more classical criteria concerning issuers: currently, we see that investors prefer companies that are themselves very careful about their own diversification, whether in their own assets or their operational functioning. And this is related, among other parameters, to the size of issuers.

CLOSING



Charles-Albert Lehalle

I think we are running out of time. We have traveled from the fascinating world of global supply chains for goods to the supply chains of financial services, custodians, and depositories.

Before closing this roundtable, I'll offer a final word to wrap up. I have the feeling that we talked a lot about **stationarity**. Indeed, behind everything you said, it is about how the world is changing and

whether the data we have continues to accurately describe what the future will be.

What strikes me is that twenty or twenty-five years ago, we were talking about **forecasting**. That suggests we were very confident; we trusted in the stationarity of the data. When you forecast, you believe you are in a system where you can simply draw the continuation of a curve and it will follow that path.

Then, with the advent of alternative data, we forged the word **nowcasting**. Suddenly, the horizon moved closer to us. We didn't know exactly what the distant future would hold, but we were satisfied to 'nowcast' – to understand the present with precision.

Now, we are jumping into **foresight**, which is about **scenarios**. We don't just follow the data; we try to understand what the potential scenarios are, and then we gather data to infer what would happen within those specific frameworks. I see a massive change in how we use data in modeling. In a world where some claim AI means we will no longer need modeling, it is actually exactly the opposite. What we need is foresight, which requires robust models and assumptions that look **beyond** the data rather than just following it.

As Sébastien said, the world is adapting. Even what we observe today may no longer be valid tomorrow because of a shock – especially the kinds of shocks we've discussed. Similarly, the financial system has adapted significantly; we saw during the war in Ukraine that the mechanisms put in place during the pandemic worked quite decently.

Because the world is constantly adapting, we must ask: what is the value of data that describes only the past? Even with only four panelists, we are opening up many new areas of research. It is a very good start for the **Forum on Risk**. Thank you.

OVERALL CONCLUSION

The discussion concludes by underscoring a fundamental shift in how the financial world interacts with global instability: the move from traditional forecasting and "nowcasting" toward **strategic foresight and scenario-based modeling**. In a world where stationarity can no longer be assumed, the value of data describing only the past is diminishing; instead, we must use robust models and assumptions to look beyond the data and understand potential future frameworks.

The panelists have provided a roadmap for this transition:

- **Technical Integration:** We must move from single indicators to a coherent framework that integrates **multiple heterogeneous signals**—market, text, and macro-based—using Machine Learning to extract meaningful signals from high-dimensional noise.
- **Strategic Depth:** Investors and managers must look beyond traditional diversification, digging deeper into **supply chain sourcing** and recognizing that geopolitical risk is **endogenous**, driven by the strategic calculus of international actors.
- **Operational Resilience:** Institutions must adapt to a fragmented landscape by addressing **sovereign custody risks** and the evolving role of Central Securities Depositories.

The urgency of this adaptation is echoed in the report "**Building Geopolitical Muscle: How Companies Turn Insights into Strategic Advantage**," published on January 12, 2026, at Davos by **BCG, IMD Business School, and the WEF**. However, despite the sophisticated methods discussed by the panel, a significant gap remains in corporate readiness. According to **Morningstar**, **fewer than 20% of companies have created a dedicated geopolitical department**.

Ultimately, as the panelists suggested, the goal is to move from "learning to understand" to "understanding to act". To avoid a "Christmas tree effect" of flashing red lights without a clear response, institutions must formalize their geopolitical expertise and integrate it into the core of their financial and operational strategies.



**SÉBASTIEN
JEAN**

Sébastien Jean is professor of economics at Conservatoire National des Arts et Métiers in Paris (chaire Jean-Baptiste Say d'économie industrielle) and a member of France's Council of Economic Advisers (Conseil d'analyse économique). He is also Associate Director with Ifri, where he is in charge of the "Goeconomics and Geofinance" initiative. He has previously been Director of CEPIL, the French leading centre for research and expertise in international economics, from 2012 to 2021, after holding positions at INRAE, OECD and CEPIL.



**CHARLES-ALBERT
LEHALLE**

Charles-Albert Lehalle is a Professor at École Polytechnique (IP Paris), where he co-heads the "AI for Markets and Quantitative Investment" master's program, and a member of the Scientific Directory of the Institut Louis Bachelier. His research and teaching focus on liquidity, price formation, and the applications of AI in financial markets. Previously, he served as Global Head of Quantitative R&D at ADIA and held senior quantitative research leadership roles at Capital Fund Management (CFM) and Crédit Agricole. A prolific author with over 80 publications, his works include books like "Market Microstructure in Practice" and "Machine Learning and Data Sciences for Financial Markets".



**DOROTHÉE
ROUZET**

Dorothee Rouzet has been the Chief Economist of the French Treasury since 2023. Previously, she held various positions at the OECD as an international trade economist, then as Senior Economist and Adviser to the Chief Economist. In 2020, she was appointed Adviser for Macroeconomics to Bruno Le Maire, Minister of Economy and Finance. Ms Rouzet subsequently served as Chief France Economist at Citigroup. She has also been a visiting lecturer at ESCP Europe and the University of Paris 1. Ms Rouzet holds a PhD in Economics from Harvard University, is a graduate of the École Normale Supérieure, and holds a degree from ENSAE.



**JULIEN
PINCET**

Julien Pincet is the head of research for the Geofinance project at the Institut Louis Bachelier, which was launched in January 2024. Previously, after completing a dual curriculum (ESCP Business School and a degree in mathematics), he held positions as a fund manager, market strategist, and risk manager for specific areas (hedge fund management in particular). In addition to his professional expertise in risk analysis and asset allocation, Julien has in-depth knowledge of monetary economics, payment systems, and goeconomics.



**ANNA
SIMONI**

Anna Simoni is Directrice de Recherche at CNRS-CREST and Professor of Econometrics and Statistics at ENSAE and École Polytechnique. Before joining CNRS, she held positions at Bocconi University, the University of Mannheim, and Boston College. In 2019, she was awarded the CNRS Bronze Medal. Anna Simoni is an Associate Editor of the Journal of Econometrics, and a Fellow of the Institut Louis Bachelier and of the Hi! Paris Center on Artificial Intelligence for Science, Business and Society. Her research lies at the intersection of machine learning and econometrics, and includes the development of AI-driven methods for forecasting and nowcasting financial and macroeconomic series.

