14th Annual CompNet Conference

Co-hosted by the Bank of Lithuania and CompNet

Theme: *Productivity, Convergence, and Competitiveness in Europe — with a Focus on Small Open Economies*

Day 1

Opening Remarks

Speaker: Aurelija Proškutė (Bank of Lithuania)

Aurelija Proškutė opened the conference by welcoming participants to the 14th Annual CompNet Conference, jointly hosted by the Bank of Lithuania and CompNet. She introduced the central theme—Productivity, Convergence, and Competitiveness in Europe—with a particular emphasis on the role of small open economies in shaping Europe's economic resilience.

Speaker: Dr. Julita Varanauskienė (Deputy Chair of the Board, Bank of Lithuania)

Dr. Varanauskienė began by invoking Mario Draghi's warning that Europe remains too fragmented and lacks the scale and integration needed for long-term prosperity. This fragmentation, she noted, presents a heightened challenge for smaller economies like Lithuania. Yet, she argued that small size can be an asset when coupled with openness, flexibility, and innovation.

She highlighted Lithuania's own performance:

- High startup activity and venture capital investment
- Strong business dynamism
- Leading female employment in knowledge-intensive sectors
- Ranked 33rd in the Global Innovation Index 2025, and 1st globally in unicorn value relative to GDP

Dr. Varanauskienė emphasized that with the right policies—open markets, competition, investment in human capital, and space for innovation—small economies can be drivers of Europe's productivity revival. She concluded by encouraging participants to reflect on

the potential for cooperation between small and large economies throughout the five academic sessions of the conference

Speaker: Filippo Di Mauro (Founder & Chairman, CompNet)

Filippo Di Mauro expressed his satisfaction at finally bringing the CompNet Annual Conference to Lithuania, a long-anticipated venue. He thanked the Bank of Lithuania for its hospitality and reiterated that CompNet aims to represent all of Europe—including its peripheries and border regions—at a time of global uncertainty.

He provided an overview of CompNet's development:

- 15 years of operation, with a large microdata-based infrastructure
- Data from 23 EU and non-EU countries, covering productivity, finance, trade, labor, and competition
- Strong emphasis on *firm-level dynamics*

He also introduced CompNet's Microdata Infrastructure (MDI), developed with national partners to enable secure, harmonized, and cross-country comparable access to firm-level data. The MDI is already operational in several countries and supports faster, evidence-based analysis on topics such as energy efficiency, global trade shocks, and digitalization.

Filippo concluded by noting:

- CompNet's expanding international presence (e.g. events in Japan, Hong Kong, Berlin, Barcelona, Malta, Tokyo, and Brussels)
- Its institutional anchoring at the Halle Institute for Economic Research (IWH) in Germany
- Plans to further open access to the infrastructure

He thanked Lithuania again for warm welcome and encouraged participants to fully engage in the conference discussions.

Keynote Address

Speaker: Prof. Chad Syverson (University of Chicago)

Topic: *Evaluating Turkey's 2012 Place-Based Industrial Policy: Lessons for Productivity and Regional Convergence*

Professor Chad Syverson presented his research on a large-scale investment subsidy program in Turkey. The program, launched in 2012, varied subsidy generosity by region, with poorer areas receiving more generous support. The goal: enhance productivity and reduce regional inequality.

Research Questions:

1. Did the program boost production and total factor productivity (TFP)?
2. Did it generate supply-chain spillovers?
3. Did it reduce regional income inequality?

Key Findings:

- A 5-percentage-point increase in investment tax credits led to:
    - ~3.2% increase in TFP
    - ~16% increase in firm revenues
- Supply-chain spillovers occurred both upstream and downstream but did not yield further TFP gains
- Instead, spillovers leaked to wealthier regions, diminishing the policy's redistributive effect
- At the macro level, the program reduced regional wage inequality by ~1 percentage point

However, Syverson emphasized that this modest outcome was likely held back by several leakage mechanisms:

- Migration to wealthier cities
- Capital ownership structures
- Inter-regional production linkages

Counterfactual modeling showed that without these leakages, the impact on inequality could have been up to four times larger.

Conclusion:

While the policy did succeed in increasing productivity, its *place-based design* led to unintended spillovers that limited its convergence effects. This provides a cautionary lesson for the design of similar industrial policies elsewhere.

Questions & Discussion

Eric Bartelsman

- Observed that a 1pp decline in wage inequality was modest relative to existing gaps.
- Asked about the fiscal cost of the tax credit and whether firm-level targeting (low-TFP firms) might be more effective.

  → **Syverson:** Argued that targeting by firm productivity can be problematic—low-TFP firms may be inefficient for structural reasons. Cited Bloom et al.'s India study, noting mixed evidence for such micro-targeting.

Maarten De Ridder

- Questioned whether place-based industrial policy is even worthwhile.
- Noted issues of scale bias and misallocation, and questioned the policy priority of regional inequality.

  → **Syverson:** Referred to historical programs like the *Tennessee Valley Authority*, but emphasized that his study evaluates outcomes—not full cost-benefit. Warned against interpreting limited gains as proof of net benefit, especially given fiscal and political costs.

Filippo Di Mauro

- Found the framework useful but questioned subsidy take-up patterns—why were wealthier regions overrepresented?

  → **Syverson:** Acknowledged that firm discretion and self-selection likely led to suboptimal take-up. In some poor regions, participation was unexpectedly low, reinforcing concerns about design flaws and policy leakage.

Academic Session 1

Paper 1 — *Monopsony Power, Entrepreneurship, and Productivity*

Presenter: Bernardo Mottironi (London School of Economics)

Discussant: Philip Schnattinger (Bank of England)

Topic Summary:

This paper examined how monopsony power in labor markets affects firm size distribution, entrepreneurship dynamics, and aggregate productivity—using Italy as a case study.

Motivation and Theoretical Contribution:

The model is built on the idea that firm size is central to technology adoption: while intangible investments offer high productivity potential, they come with large sunk costs that smaller firms struggle to absorb.

The central hypothesis is that monopsony power—when firms can pay wages below competitive levels—induces excess entrepreneurship by making market entry cheaper. This leads to a proliferation of small, low-productivity firms that fail to adopt advanced technologies.

Mechanisms Identified:

- Misallocation of resources
- Excess entry by low-productivity entrepreneurs
- Weaker diffusion of technology across firms and workers

Empirical Findings:

Using CompNet and ISTAT microdata from Italy, the study validated ten model predictions. Key patterns in high-monopsony provinces:

- Smaller average firm size
- Greater wage dispersion
- Lower wages and IT adoption
- ~21% lower aggregate productivity compared to competitive benchmark
- Excess entry was the dominant driver of productivity loss

Discussion & Critiques:

- Some questioned whether the timing assumptions in the model were empirically realistic.
- Suggestions were made to include additional control variables.

- The choice of Italy as a case was challenged, though Mottironi defended it as a natural setting, especially due to the stark North–South divide in labor market structure.

Broader Questions Raised:

- How can policy encourage productive entrepreneurship while deterring inefficient entry?
- Could technological shifts (e.g. AI) reshape monopsony dynamics or technology diffusion?
- What explains the geographic divergence in monopsony power, with infrastructure gaps highlighted as a potential factor?

Conclusion:

The study provides both a theoretical and empirical explanation for the prevalence of small, low-productivity firms in Southern Europe—arguing that labor market power, often seen as a microeconomic issue, may also be a major source of macro-level productivity challenges.

Paper 2 — *The Italian Jobs Act: Productivity Gains and Distributional Tradeoffs*

Presenter: Guido Franco (Centro Studi Confindustria)

Discussant: Lukas Böhnert (University of Oxford)

Topic Summary:

The paper analyzed the impact of the 2014 Italian Jobs Act, a major reform of employment protection legislation (EPL), on productivity and income distribution at the firm level.

Reform Context:

The reform applied to firms with more than 15 employees and new hires, eliminating reinstatement rights (except in discrimination cases) and replacing them with capped monetary compensation. This shift in dismissal rules represented a significant deregulation of job protection.

Empirical Strategy:

- Difference-in-differences design
- Comparison of firms just above and just below the 15-employee threshold

Key Results:

- +1% increase in TFP among treated firms
- +2.2% increase in capital–labor ratio (suggesting capital deepening)
- Labor productivity rose by ~1.5%, but wages did not keep pace
- Labor income share declined by up to 0.7 percentage points over five years
- Effects were stronger in services and less capital-intensive sectors

Interpretation:

- Firms responded to lower firing costs by restructuring and adopting riskier, more efficient technologies.
- Gains accrued disproportionately to capital owners, pointing to a distributional trade-off.

Robustness:

- Results held across multiple specifications and placebo tests.
- Hiring subsidies did not bias results; if anything, they worked in favor of control firms.

Conclusion:

- Deregulation enhanced firm-level efficiency but raised equity concerns.
- For emerging markets, the policy lesson is to design EPL carefully: once granted, protections are politically hard to reverse.
- Policymakers should consider complementary redistribution tools to balance efficiency gains and income equity.

Academic Session 2

Paper 1 — *Reviving Growth in a Time of Workforce Ageing: The Role of Job Mobility*

Presenter: José Garcia-Louzao Perez (Lietuvos Bankas)

Discussant: Juuso Vanhala (Bank of Finland)

Topic Summary:

The study analyzed how different forms of labor mobility—especially **job-to-job mobility**—contribute to wage and productivity growth in ageing societies.

Key Findings:

- Job-to-job mobility is the dominant driver of wage and productivity growth
- Transitions involving unemployment or inactivity contribute far less
- Workforce ageing reduces mobility and thereby weakens growth:
    - ~20% reduction in wage growth
    - ~13% reduction in productivity growth
- Impact varies by country: Lithuania and Estonia are less affected

Discussant Comments:

- Ageing lowers growth but may spur **innovation and immigration**
- Estimated productivity drag: **0.12–0.15pp annually**
- Cautions raised:
    - Not all job changes are upwardly mobile (horizontal moves common in Europe)
    - Time-aggregation bias in data may overstate job changes
    - Questioned whether reallocation helps firms reach the productivity frontier

Additional Remarks:

- Even small net flows (2–3%) can explain aggregate productivity growth (e.g., Chile)
- Importance of integrating mobility research with pension systems and institutional factors
- Authors noted that Austrian data mitigate aggregation concerns, but institutional analysis remains a future step

Paper 2 — *Europe's Productivity Weakness: Firm-Level Roots and Remedies*

Presenter: Gee Hee Hong (International Monetary Fund)

Discussant: Frank Vandermeeren (DG GROW, European Commission)

Topic Summary:

This paper explored the persistent EU–US productivity gap since the late 1990s, drawing on firm-level data to identify structural barriers to scale and innovation in Europe.

Stylized Facts:

- Large EU firms underperform US counterparts in both tech and non-tech sectors
- EU firms show:
    - Lower R&D-to-sales ratios
    - Lower entry rates and fewer young high-growth firms
    - Smaller scale even among mature firms
    - Excess prevalence of small, non-scaling firms

Structural Constraints:

- Market fragmentation within the EU limits firm growth and cross-border integration
- EU's bank-based finance system is ill-suited for intangibles
- Higher R&D volatility and limited venture capital
- Human capital bottlenecks constrain firm growth and innovation

Discussant Critique & Extensions:

- Missing piece: energy cost shocks and their effect on competitiveness
- EU R&D is skewed toward mid-tech sectors
- Chinese industrial subsidies distort global competition, affecting EU incentives
- Calls for more strategic sectoral prioritization within EU innovation policy

Q&A Highlights:

- Post-2022 context: renewables and tech sovereignty rise in importance
- China now seen as strategic competitor (EVs, solar, AI, green tech)
- US recovery driven by IT sector leadership
- Open debate: Should the EU subsidize selectively to address market failures and support critical industries?

Academic Session 3

Paper 1 — *Intangible Capital and the Decline of Corporate Leverage in the EU*

Presenter: Alessandro Zona Mattioli (University of Bologna)

Discussant: Bernardo Mottironi (London School of Economics)

Research Question:

How have technological changes—specifically those related to intangible capital — affected corporate leverage and cash holdings in European companies?

Key Findings:

- European firms have experienced declining leverage and rising cash holdings since 2000.
- The increasing intensity of intangible capital is a central driver of these trends.
- Firms with higher intangible productivity tend to rely less on debt and maintain larger cash buffers.
- A firm-level model calibrated on these patterns captures multiple financial and behavioral channels driving the trend.

Methodology:

1. Documented empirical trends of falling leverage and rising cash holdings across European firms.
2. Developed and calibrated a structural model of firm behavior emphasizing financing frictions linked to intangible capital.

Discussant Comments:

Bernardo Mottironi highlighted several areas for refinement:

- Leverage metrics: Suggested analyzing *gross leverage* and *median ratios*, not just net measures.
- Interpretation of cash holdings: Proposed widening the concept beyond "human-capital retention" to include liquidity for acquisitions and investment flexibility.
- Model assumptions: Questioned the use of a constant labor-supply elasticity, which may distort how intangibles interact with market power.
- Market structure effects: Encouraged incorporating rising market power and compositional shifts into the model.

Additional Discussion Points:

Participants raised questions about how European firms finance investment if they increasingly avoid both venture capital and debt financing — whether through self-financing, lower investment, or alternative instruments.

Conclusion:

The study offers new evidence that the rise of intangibles is reshaping corporate balance sheets—leading to more conservative financial structures and deeper self-financing behavior among European firms.

Paper 2 — *Finance and Productivity Growth: The Role of Intangibles*

Presenter: Philipp Schnattinger (Bank of England)

Discussant: Alessandro Zona Mattioli (University of Bologna)

Research Question:

To what extent do financial frictions affecting intangible investment explain the weak UK total factor productivity (TFP) growth observed since the global financial crisis?

Key Findings:

- Intangibles' contribution to UK TFP growth has declined persistently since 2008.
- The slowdown stems primarily from demand-side factors—firms' diminished willingness or ability to invest in intangibles.
- Post-crisis financial constraints amplified this trend by restricting access to intangible financing.
- Overall, financial frictions account for roughly one-fifth of the UK's TFP slowdown.

Methodology:

The study integrates financial frictions into a growth model focused on intangible assets, building on post-crisis literature to simulate and quantify their macroeconomic impact.

Discussant Comments:

Alessandro Zona Mattioli offered constructive feedback:

- Strengthen external validity through cross-country or firm-level empirical testing, beyond model simulations.

- Examine the complementarity between tangible and intangible capital, as downturns in one may amplify productivity losses in the other.
- Explore possible “bright spots” within tangible capital that could offset intangible-driven slowdowns, as suggested in OECD research.

Additional Comments:

The discussant and audience agreed that the paper makes a timely contribution, highlighting the central role of finance in enabling productivity growth in economies increasingly driven by intangible assets.

Conclusion:

The findings reinforce the idea that post-crisis financial conditions—especially the underdevelopment of funding channels for intangible capital—have been a key structural drag on UK productivity. Addressing these frictions is essential for restoring sustained growth.

Day 2

Opening Remarks

Speaker: Gediminas Šimkus (Chair of the Board, Lietuvos Bankas)

Gediminas Šimkus opened the second day by reflecting on the growing demand for protection and stability in an increasingly uncertain global environment. He linked this theme to Bulgaria’s upcoming accession to the euro area, underscoring that monetary integration must be complemented by deep economic integration to ensure long-term cohesion within the Economic and Monetary Union (EMU).

He noted that this year’s conference continues the previous year’s dialogue, focusing on the role of small—or rather, “compact”—open economies. He emphasized that the term *compact* better captures their agility and adaptability, qualities that are crucial in an era of technological and geopolitical volatility.

Mr. Šimkus identified competitiveness, resilience, and productivity as increasingly dependent on capital formation, integration, and foreign direct investment. Yet, he argued

that the true engine of growth lies in adaptability. Lithuania's own experience illustrates this principle:

- During the COVID-19 crisis, the manufacturing sector rapidly reallocated capacity and emerged stronger.
- In the second quarter of 2025, Lithuania met all its energy needs domestically, a striking turnaround from complete import dependence only seven years earlier—accelerated by the energy challenges following Russia's invasion of Ukraine.

Turning to institutional factors, he observed that Lithuania's history includes both inclusive and extractive institutions. Since the 1990s, the country has chosen adaptive, forward-looking governance, supported by its NATO, EU, and OECD memberships. However, he cautioned that inclusiveness alone is insufficient—effective institutions must also be able to act decisively and swiftly.

He stressed that human capital is the foundation of both adaptability and sustained growth. While returns to education and training may take time, for small economies—where human talent is the primary resource—such investments are indispensable.

Another defining feature of compact economies, he noted, is their outward orientation. Without large domestic markets, their firms are compelled to compete internationally from the outset, fostering resilience and innovation. Lithuanian exporters have repeatedly shown an ability to adjust to external shocks, a critical advantage in today's uncertain environment.

Mr. Šimkus concluded by emphasizing that stable global institutions are essential for long-run prosperity. Though geopolitical risks present challenges, they can also be catalysts for innovation and transformation. What Europe needs now, he said, is stronger collective action—in defense, strategy, and investment—to reduce fragmentation and enhance productivity.

Policy Panel Discussion I

Theme: General Competitiveness and Productivity Developments in Europe

Chair: José Garcia-Louzao Perez (Lietuvos bankas)

Panelists: Eric Bartelsman (Vrije Universiteit Amsterdam), Debora Revoltella (European Investment Bank), Rolf Strauch (European Stability Mechanism, CEPR)

The first policy panel focused on Europe's persistent productivity challenges and the policy imperatives identified in the Draghi report. José Garcia-Louzao, moderating the discussion, opened by emphasizing the high-stakes context in which productivity issues are now situated: in addition to revitalizing growth, Europe must ensure inclusive outcomes and meet growing defense and security needs, all within the constraints of tightening budgets.

A central point of consensus among the panelists was the urgent need to simplify and unify regulatory frameworks across the EU. Rather than maintaining more than 27 distinct national rulebooks governing labor protection, capital markets, banking systems, and service provision, panelists argued that Europe must strive for regulatory coherence. One participant noted provocatively that "even a bad but unified policy may be better than fragmented ones," underscoring the view that for firms, clarity and consistency across jurisdictions are prerequisites for scaling operations, investing in innovation, and participating in cross-border trade.

The conversation then turned to investment capacity, particularly in the dual domains of R&D and defense. Some expressed concern that ramping up spending in these areas—especially under pressure—might primarily inflate domestic wages or drive up import bills. Others countered that research and production capabilities are increasingly scalable, especially with the help of digital technologies, and that well-structured investments can be deployed rapidly when the right governance frameworks are in place.

Panelists also reflected on the broader architecture of European integration. They acknowledged that while the Economic and Monetary Union has succeeded in advancing monetary integration, this alone is no longer sufficient. Economic integration—in the form of a more robust banking union, harmonized capital markets, and smoother labor and service mobility—is now essential to underpin sustained productivity growth.

Throughout the session, the need to focus on structural reforms that enable both resilience and dynamism remained a common thread. From simplifying administrative burdens to aligning fiscal policies with long-term competitiveness goals, the panel stressed that Europe must deliver not just more integration, but better and faster integration, capable of translating ambition into actionable outcomes.

Interview with Chad Syverson

Interviewee: Chad Syverson (Lietuvos bankas)

Interviewer: Aurelija Proškutė (University of Chicago)

In a wide-ranging and thought-provoking interview, Professor Chad Syverson explored the conceptual and empirical foundations of productivity research and its implications for policymakers.

Syverson began by clarifying what makes productivity both central and elusive. At its core, productivity measures how efficiently inputs are transformed into outputs. Yet in practice, both inputs and outputs are hard to define and even harder to measure. Productivity often shows up as a residual, capturing everything not explained by observable variables. This methodological challenge complicates comparisons across countries and sectors, and it blurs the line between technical efficiency and other performance dimensions, such as product quality or consumer valuation.

This ambiguity is especially problematic in policy debates, where “competitiveness” is frequently used as a stand-in for productivity—even though the term is broader, fuzzier, and often includes demand-side considerations. Syverson raised an important unresolved question: *should demand-side differences—such as consumer preferences for similar products across regions—be factored into productivity measures?*

He then turned to the global productivity slowdown, which has affected nearly all advanced economies over the past two decades. Although the causes remain uncertain, the phenomenon is clear. Some economies, like the U.S., showed signs of resilience post-COVID, while others, such as the UK, continued to stagnate. Syverson suggested that artificial intelligence could serve as the next general-purpose technology capable of reversing the trend, but its transformative effects have yet to materialize in the data.

At the micro level, productivity dispersion across firms is vast and persistent. More productive firms tend to be more profitable, more innovative, pay higher wages, and have longer lifespans. These differences, Syverson argued, are driven by a combination of managerial quality, access to high-quality inputs, and organizational learning, among other factors. Better management practices, in particular, are strongly correlated with higher productivity—yet we still lack a precise definition of what constitutes “good management.”

On the policy front, Syverson advocated for frameworks that facilitate the reallocation of resources—capital, labor, and market share—from less productive to more productive firms. Strong competition policy, flexible labor markets, and reduced entry barriers are all vital. He also addressed environmental policies, noting that while emission regulations may initially divert resources away from productive uses, the falling costs of renewable

technologies are making these trade-offs less severe over time. The key, he argued, is finding a political balance between environmental goals and productivity performance.

When asked about benchmarking against the United States, Syverson advised caution. While comparisons can be informative, an overemphasis on closing the productivity gap risks missing deeper structural challenges. Still, he emphasized that neglecting productivity growth altogether would be a critical mistake, as it remains the single most important lever for improving long-term welfare and fiscal sustainability. The widening U.S.–EU productivity gap since the financial crisis—further exacerbated by the post-COVID divergence—reflects underlying differences in technology adoption, management, and capital deepening, particularly in IT-intensive sectors.

The interview concluded with several open questions: How should productivity be measured in sectors like finance and insurance, where outputs are intangible or difficult to price? Should countries aim to be innovation leaders or efficient adopters of existing technologies? And what role should foreign direct investment play in regional development strategies, given the frictions of housing, infrastructure, and labor mobility?

Syverson's final message was clear: while productivity remains the speed limit of economic growth, we are far from understanding all the forces that shape it. The next wave of policy and research must focus not only on boosting productivity, but on aligning it with broader societal goals—economic inclusion, environmental sustainability, and institutional trust.

Policy Panel Discussion II

Theme: Structural Resilience and Technological Adaptation
Chair: Filippo di Mauro (IWH)
Panelists: Mihnea Constantinescu (National Bank of Moldova), Filiz Unsal (OECD), Vladas Algirdas Bumelis (Northway Biotech), Agnė Klimavičienė (Invest Lithuania)

The second policy panel explored the institutional and technological levers that small open economies can use to enhance their competitiveness in a volatile global environment. Bringing together central banking, private sector, and multilateral perspectives, the panel stressed the importance of strategic specialization, institutional agility, and cross-border cooperation.

The discussion opened with the recognition that small economies cannot lead in every sector—nor should they try. Instead, the most resilient and competitive small states are

those that invest early in targeted areas of strength and build institutional capacity around them. Lithuania's sustained focus on biotech and fintech was cited as a case in point. The "investment highway" initiative—streamlining procedures to attract foreign direct investment—was highlighted as a concrete example of how nimbleness and clarity can make a small economy globally competitive.

Panelists agreed that reducing policy uncertainty and regulatory fragmentation is crucial, not only at the European level but also domestically. A better-functioning single market, more coherent service regulations, and the removal of barriers to foreign investment were seen as preconditions for long-term competitiveness. At the same time, panelists stressed that national governments must avoid becoming sources of unpredictability themselves. Transparent rule-making and credible implementation are critical to maintaining investor confidence and mobilizing private capital.

The conversation also addressed the importance of regional alliances, particularly among Nordic and Baltic states. These partnerships can facilitate faster alignment of standards, infrastructure development, and joint investment in R&D and skills. However, the panel was clear that regional cooperation must be embedded within a broader, holistic approach that spans finance, innovation systems, labor markets, and education policy. One recurring concern was the growing skills shortage in many small economies—a constraint that could undermine even the best-laid competitiveness strategies if not addressed urgently.

The panel closed with a shared sense of urgency. In today's global economy, speed is not a luxury—it is a strategic imperative. For small nations, the ability to design and implement effective policies quickly is itself a competitive advantage. As one speaker put it, "In small economies, speed is scale."

Academic Session 4

Paper 1: *Fueling the Future: Macro-level Impacts of Environmental Policies via Firm-level Responses*

Presenter: Fatih Özturk (OECD)

Discussant: Andreas Reinstaller (Oesterreichische Nationalbank)

Research Question:

How do carbon taxes and environmental policy stringency (EPS) impact firms' energy use, pricing strategies, and relative resilience?

Main Findings:

The study finds that EPS increases relative energy prices while reducing quantities consumed, particularly affecting smaller firms. Large energy-intensive firms or "mega consumers" appear more resilient—partly due to price stability and bargaining power—but dirty energy sources remain significantly cheaper than cleaner alternatives. This persistent cost gap slows the transition to cleaner technologies.

Methodology:

Using firm-level data and local projections, the paper estimates the dynamic effects of environmental policy tightening on firms' energy choices and outcomes.

Discussant Comments:

Reinstaller questioned whether the analysis sufficiently accounts for intra-fuel substitution (e.g., from coal to gas), noting that such transitions are relevant in countries like Austria and Germany. He also raised concerns about measurement precision: mega consumers' resilience could stem from technology adoption rather than just contracting power. Moreover, the use of an aggregate EPS measure may obscure heterogeneity, and the distinction between policy stringency and enforcement was emphasized.

Q&A Highlights:

Eric Bartelsman suggested further attention to supply-side effects and differentiation between relative and average price dynamics. Aurelija (Bank of Lithuania) sought clarification on how "mega consumers" were defined. Özturk explained that definitions were based on consumption thresholds, and control variables accounted for firm efficiency. France's nuclear-based electricity was categorized as clean energy in the analysis.

Paper 2: *Emissions-Adjusted Total Factor Productivity*

Presenter: Maarten De Ridder (LSE)

Discussant: Soroosh Siavash (Lietuvos bankas)

Research Question:

Can a measure of productivity that adjusts for emissions provide a more accurate picture of sustainable growth?

Main Findings:

De Ridder introduced a novel emissions-adjusted total factor productivity (TFPE) metric, incorporating the social cost of carbon (SCC) into standard TFP estimates. The new measure reveals that, at low SCC levels, TFPE and traditional TFP are broadly aligned, implying that improving productivity does not necessarily raise emissions. TFPE enables better integration of environmental externalities into macroeconomic performance indicators.

Methodology:

The TFPE measure builds on Nordhaus (1992), using data from the Penn World Table and the Global Carbon Project. Emissions data are adjusted for trade, and SCC values are applied to compute adjusted output measures.

Discussant Comments:

Siavash pointed out that TFPE outcomes are highly sensitive to the chosen SCC value. He noted that differences between TFP and TFPE were primarily explained by shifts in emissions intensity. A promising avenue for future research is identifying what drives those shifts in emissions per output unit.

Academic Session 5

Paper: *Industrial Specialization and Regional Growth*

Presenter: Lukas Böhnert (University of Oxford)
Discussant: Tommaso Bighelli (Bank of England)

Research Question:

How does industrial specialization influence short-term prosperity and long-term growth across regions?

Main Findings:

Using county-level U.S. data spanning 1950 to 2020, the study finds that industrial specialization correlates positively with income in the short run but negatively with long-run growth. Highly specialized regions in 1950 enjoyed higher income levels at the time but grew more slowly over the following seven decades. A nonlinear S-shaped relationship between specialization and income suggests that while some specialization is beneficial, excessive concentration may be harmful.

Methodology:

Specialization was measured using a Gini index based on industry income shares. Regression analysis linked initial specialization levels to income trajectories over time. A theoretical model was developed to weigh the benefits of clustering and agglomeration against the risks of industry-specific shocks.

Discussant Comments:

Bighelli praised the clarity of the empirical analysis but called for a stronger justification of the chosen theoretical model. He noted that the paper could better explain why specialization works well in some contexts (e.g., Silicon Valley) but fails in others. Additionally, he encouraged greater engagement with contemporary drivers of structural change, including automation and the global rise of China. Finally, the model would benefit from incorporating firm-level dynamics and creative destruction.

Q&A Highlights:

Audience questions probed the role of financial frictions in amplifying regional vulnerabilities: if access to credit is limited, how do specialized regions adapt to industrial shocks? This line of inquiry suggested that financial constraints might deepen the downside risks of specialization.

Closing Remarks

Speaker: Javier Miranda (IWH)

Javier Miranda concluded the conference by thanking all participants, speakers, and organizers for their contributions. He offered particular thanks to Chad Syverson for his transatlantic participation and to the Bank of Lithuania for their excellent collaboration and hospitality. Miranda also announced two upcoming events: the FINPRO 5 meeting in

Tokyo in April, and the next *CompNet Annual Conference*, which will take place in Brussels. Formal invitations will follow.

Speaker: Aurelija Proškutė (Lietuvos bankas)

Aurelija Proškutė closed the conference by reiterating the Bank of Lithuania's appreciation for the long-standing partnership with CompNet. She emphasized how meaningful it was to finally host a joint event in Vilnius and expressed gratitude to the full organizing and technical team, inviting the audience to join her in a round of applause for their efforts. She wished all participants a pleasant end to their stay.