

Central Banking

Week 14: Future Challenges for Central Banks

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Agenda

1. Future Challenges for Central Banks
2. Guest Speaker: Vasyl Boryshchuk, National Bank of Ukraine
3. Class Activity

1. Future Challenges for Central Banks

Introduction

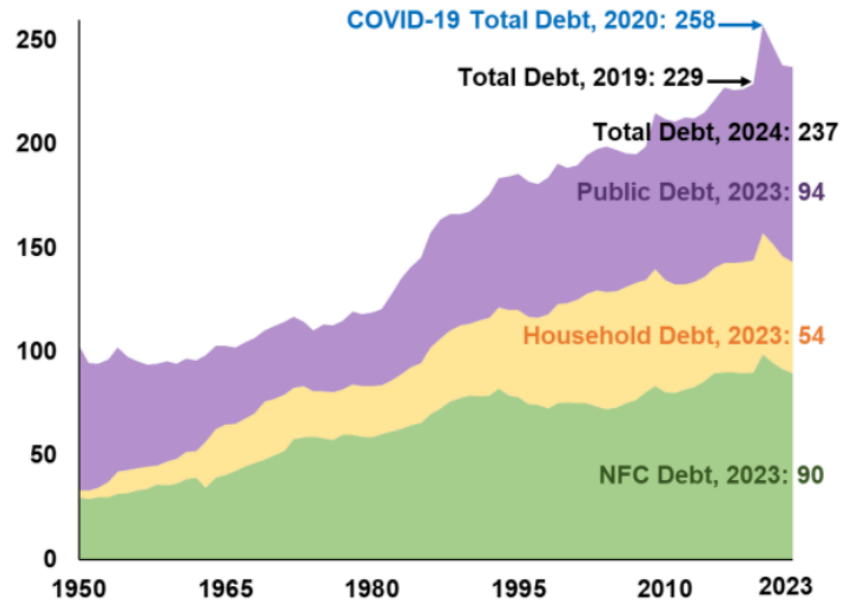
- The world economy is becoming increasingly complex, uncertain, and interdependent.
- Central banks must evolve to meet new challenges, from AI to climate change, from high debt levels to fragile financial markets.
- In this lecture, we will explore:
 - The macroeconomic and structural pressures confronting central banks
 - Technological, fiscal, geopolitical, and demographic factors driving complexity
 - The role of innovation, data, and collaboration in shaping the central bank of the future

Structural Shifts Affecting Central Banks

- **Persistent High Debt Levels:** Constrains monetary policy space.
- **Ageing Populations:** Alters savings-investment dynamics.
- **Climate Change:** Increases exposure to shocks and transition risk.
- **Low Productivity Growth:** Sustains low equilibrium interest rates.
- **Digitalization:** Alters monetary transmission mechanisms.

Global Public and Private Debt Trends

Figure 1. Global Public and Private Debt Evolution *(Percent of GDP)*



(Source: IMF 2024 Global Debt Monitor)

- Global debt levels surged during the COVID-19 crisis, peaking at **258% of GDP in 2020**.
- In 2024, debt remains elevated at **237% of global GDP**, showing only partial unwinding.
- The composition of debt in 2023:
 - **Public debt:** 94% of GDP
 - **Non-financial corporate (NFC) debt:** 90%
 - **Household debt:** 54%
- High debt levels limit central banks' policy space and pose risks to financial stability.
- Fiscal and monetary coordination is becoming increasingly critical.

Technological Disruption

- Rise of AI and big data introduces new analytical possibilities and operational tools.
- Machine learning is now used for:
 - Forecasting inflation and output
 - Early warning systems for financial instability
 - Real-time policy evaluation
- Central banks must build digital skills and governance frameworks.

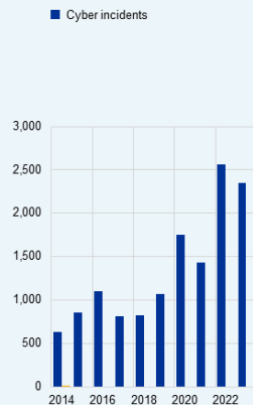
AI, Cyber Risk, and Market Signals

Chart A

The advance of AI technology has sparked public and investor interest, including on its implications for cyber risk and cybersecurity

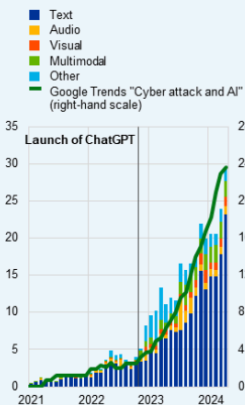
a) Number of publicly disclosed cyberattacks over time

(2014-23, total)



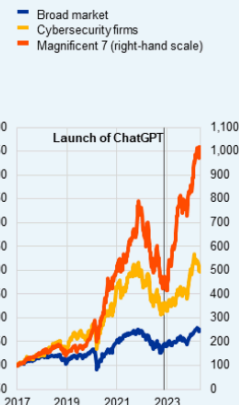
b) Number of open-source AI models, by type, and Google searches for “Cyber attack and AI”

(Jan. 2021-Apr. 2024; left-hand scale: thousands, right-hand scale: index)



c) Stock price developments for cybersecurity and AI firms vs the broader market

(6 Jan. 2017-3 May 2024, indices: 6 Jan. 2017 = 100)



Sources: University of Maryland CISSM Cyber Attacks Database, Google Trends, Hugging Face, Bloomberg Finance L.P. and ECB calculations.

- **Panel A:** The number of disclosed cyberattacks has grown steadily since 2014, with steep increases in recent years.
- **Panel B:** A surge in open-source AI models and public interest in “Cyber attack and AI” followed the launch of ChatGPT.
- **Panel C:** Stock prices of cybersecurity and AI firms outperformed the broader market, highlighting investor confidence.
- These dynamics reflect the growing centrality of AI and cybersecurity in financial market expectations and regulatory focus.

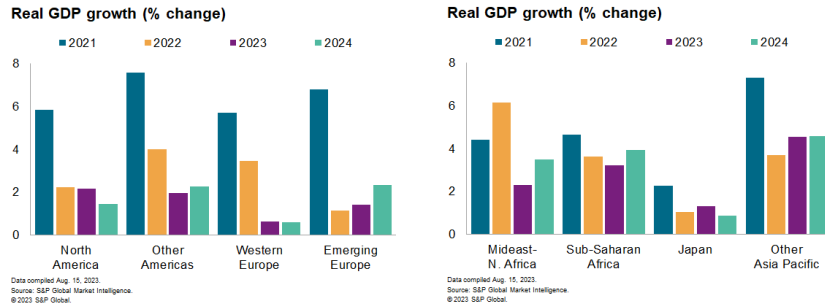
Climate Change and Central Banks

- Physical and transition risks impact financial stability and inflation.
- Growing use of climate stress testing in financial supervision.
- Some central banks integrating green objectives via disclosure rules, asset purchases, or collateral policies.
- Balancing mandates remains a key challenge.

Global Uncertainty and Monetary Policy

- Volatile financial markets, trade fragmentation, and geopolitical tensions cloud forecasts.
- Uncertainty discourages investment and dampens transmission of policy signals.
- Communication strategies are more important than ever to anchor expectations.

Monetary Policy Divergence



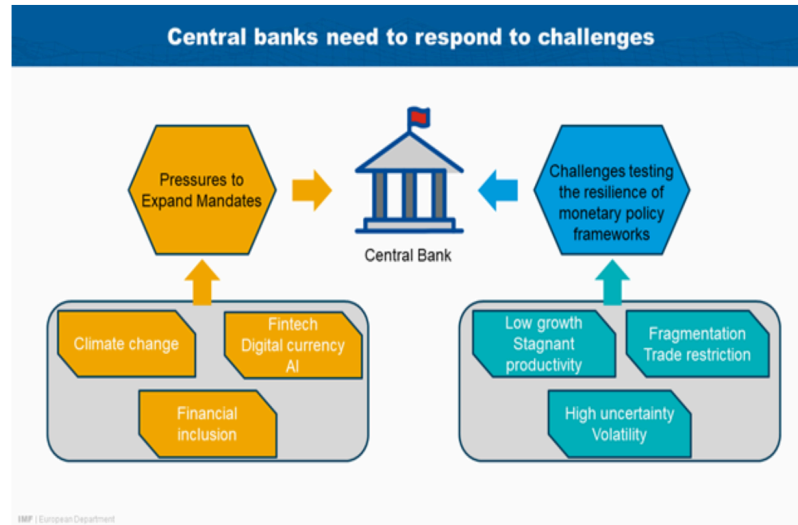
(Source: S&P Global)

- **US Federal Reserve:** Likely to raise rates by 25 bps in November; September hike also possible due to strong activity and tight labor market.
- **European Central Bank:** Likely done with hikes; focus shifting to balance sheet reduction.
- **Advanced Economies:** Rate cuts expected mid-2024.
- **Emerging Economies:** Some already cutting rates as anticipated.

Governance and Mandates

- Expanding roles risk overburdening central banks and blurring accountability.
- Need for clarity on primary vs. secondary objectives (e.g. price stability vs. climate support).
- Institutional reforms needed to align mandates with capacities.

Pressures and Framework Challenges



(Source: Kammer (2024))

- Central banks today face **dual challenges**:
 - **Mandate Expansion Pressures:** Rising expectations to address climate, fintech, financial inclusion, and digital currency.
 - **Framework Resilience Tests:** Responding to a world of low growth, fragmentation, and extreme uncertainty.
- This complex policy environment calls for a strategic rethinking of tools, objectives, and institutional design.

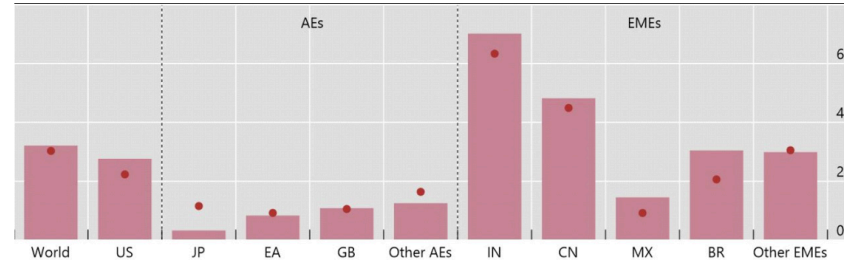
Global Growth Outlook (2024-2025)

Global growth (Graph 1)

Despite heightened policy uncertainty, the soft-landing scenario is still intact¹

In per cent

Graph 1



¹ The bars represent the IMF *World Economic Outlook* forecasted values for 2024, while the dots show the forecasted GDP growth for 2025 in February 2025.

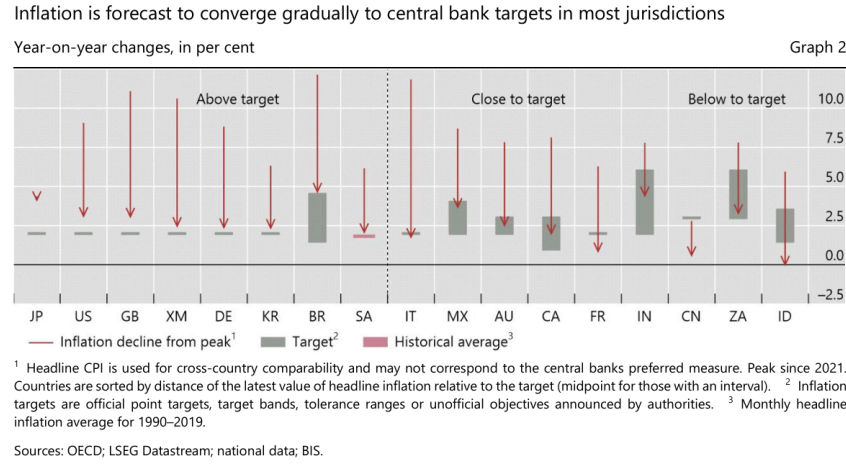
Sources: IMF; Consensus Economics; BIS.

- Global growth shows resilience despite uncertainty, with AEs led by the US and UK, and strong EME growth in India and China.
- Central banks face challenges from uneven recoveries and policy coordination.

(Source: Zhang (2025))

Global Inflation Dynamics (2025)

Global inflation dynamics (Graph 2)



(Source: Zhang (2025))

- Most countries have seen significant declines from peak inflation levels.
- While many advanced economies are **still above target**, they are showing convergence.
- Some emerging markets are closer to or even **below their targets**, raising different challenges.
- The forecast indicates **gradual return to targets**, but monetary policy must remain vigilant.

Conclusion: The Future of Central Banking

- Central banks must remain agile in a world of rapid change.
- Investing in data, digital infrastructure, and human capital is crucial.
- Clear communication, robust governance, and international cooperation will shape resilience.
- The future is complex, but with the right tools and mindset, central banks can remain anchors of stability.

2. Guest Speaker: Vasyl Boryshchuk

Guest Profile: Vasyl Boryshchuk {.smaller}

Vasyl Boryshchuk

National Bank of Ukraine
Financial Stability Division

- Over **15 years of experience** at the NBU
- Former **Deputy Head of Department**
- Instrumental in establishing the **Financial Stability Function**
- Developed key CB tools & regulations:
 - **Bank stress testing frameworks**
 - **Large exposure stress testing**
 - **Business registry and data integration tools**
- Career foundation in **banking supervision**
- Strong advocate for macroprudential innovation and systemic resilience

3. In-class Group Activity

Your Takeaways from the Guest Speaker:

- What are the key insights from Vasyl's presentation?
- How can you apply these insights to your own research or work in central banking?

Any QUESTIONS?

Thank You!

Next Class

-(June 11) Current Issues on Central Banking

- Students' presentations on current issues in central banking.
- Please be well-prepared for your presentations.