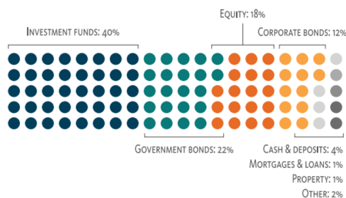
Solvency 2 News, November 2023

The European Insurance and Occupational Pensions Authority (EIOPA) collects and publishes comprehensive statistics on institutions for occupational retirement provision (IORPs) in the European Economic Area.

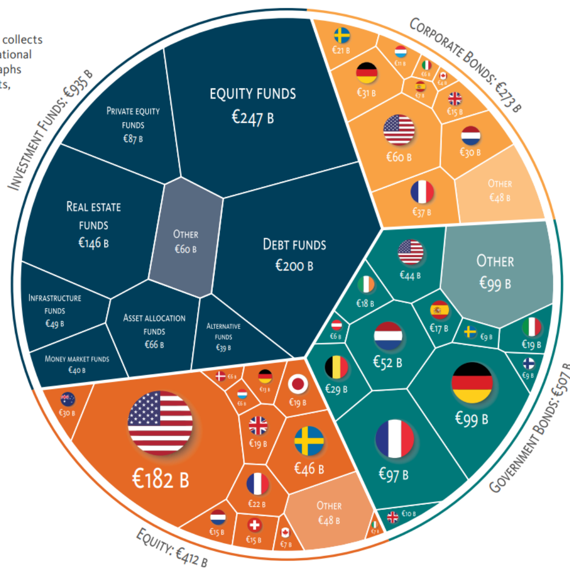
EIOPA's occupational pensions statistics update comes with interesting visual insights.

The European Insurance and Occupational Pensions Authority (EIOPA) collects and publishes comprehensive statistics on institutions for occupational retirement provision (IORPs) in the European Economic Area. The graphs in this factsheet show the size of the IORPs market in terms of assets, members as well as contributions and benefits.

As of Q4 2022, European IORPs had 71.4 million members and held €2.34 trillion in assets. Most of these assets are allocated to investment funds, government bonds, equity and corporate bonds. These four categories together make up 92% of all investments.



The chart on the right provides an overview of investments across asset types and jurisdictions. The dark orange area with the flag of the United States, for instance, shows that European IORPs have a collective equity stake of €182 billion in US businesses. The blue section of the chart shows the distribution of assets across different fund types. To delve deeper into our data on IORPs, visit EIOPA's website.



Members, contributions and benefits

The latest data release, encompassing information from the final quarter of 2022, includes a visual factsheet that provides a clear picture of how European IORPs allocate the approximately €2.5 trillion euros they manage across different asset types and jurisdictions.

The primary focus of the data visualisation is on investments in government bonds, corporate bonds, equities, and investment funds as these four categories collectively make up 92% of their investment portfolio. Additional graphs shed light on the evolution of IORPs' members, contributions and benefits over time.

To read more: https://www.eiopa.europa.eu/eiopas-occupational-pensions-statistics-update-comes-visual-insights-asset-allocation-and-members-2023-11-07_en

2023 Bank Failures - Preliminary lessons learnt for resolution

Executive summary

The bank failures of the first quarter of 2023 constitute the first real test at a larger scale of the international resolution framework established by the Key Attributes of Effective Resolution Regimes for Financial Institutions ("Key Attributes") in the aftermath of the Global Financial Crisis.

The Financial Stability Board (FSB) announced publicly that it would review the lessons to be learnt from the recent actions taken by the authorities to resolve financial institutions for the operation of the international resolution framework.

2023 Bank Failures

Preliminary lessons learnt for resolution

Over the period between March and September 2023, the FSB has reviewed the recent events in Switzerland, the United States (US), and the United Kingdom (UK) and assessed potential implications for the FSB's resolution framework as set out in the FSB Key Attributes.

This report identifies preliminary lessons learnt regarding the FSB Key Attributes' framework for

(i) resolving a global systemically important bank (G-SIB), drawing on an analysis of the Credit Suisse case; and

(ii) the resolution of systemically important banks more broadly, drawing on the recent bank failure episodes in the US.

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G-SIB resolution and the Credit Suisse case

Following long-standing difficulties and extreme episodes of liquidity stress in October 2022 and March 2023, Credit Suisse was acquired by UBS, supported by ample liquidity facilities including a public liquidity backstop, a second-loss guarantee from the Swiss government, and a write-down of Additional Tier 1 (AT1) bonds.

The actions by the Swiss authorities to facilitate a commercial transaction outside of resolution supported financial stability and the global operations of Credit Suisse. At the same time, it raises the question why resolution was not the chosen path despite it being an executable alternative at that time in light of preparations made.

The Swiss authorities had concerns about the ability of the prepared resolution strategy to address the crisis of confidence at Credit Suisse.

This report seeks to set out a clear understanding of the Swiss authorities' actions with a view to drawing lessons for the international resolution framework.
Since the summer of 2022, the Swiss Financial Market Supervisory Authority (FINMA) had initiated intensive meetings of the Crisis

Management Group (CMG), which included home and key host authorities of Credit Suisse.

In collaboration with the CMG, FINMA had conducted two valuations for the purpose of bail-in resolution (in November 2022 and March 2023), suggesting that if FINMA had pursued a full bail-in, Credit Suisse would have reopened with a consolidated Common Equity Tier 1 (CET1) ratio of about 44% of risk weighted assets (RWAs).

It was also established that Credit Suisse did not have any known retail Total Loss-Absorbing Capacity (TLAC) bond holders. FINMA had addressed, in good cooperation with the Bank of England (BoE), Federal Reserve Board (FRB), Federal Deposit Insurance Corporation (FDIC) and Securities and Exchange Commission (SEC), several technical issues to prepare for resolution.

CMG members worked on recognition aspects, as applicable, and the near-final draft documents were distributed to the CMG members.

Based on the review conducted by the FSB, it appears that the resolution planning work of the past decade, the availability of loss-absorbing resources, the collaboration that took place within the CMG in the months leading up to the failure of Credit Suisse, and the efforts of Swiss and host authorities to address remaining obstacles had put authorities in a position to conduct a single point-of-entry (SPE) resolution, if desired.

Indeed, the host authorities involved confirmed their readiness to support the execution of the SPE resolution and their confidence that resolution could be undertaken.

At the same time, the Credit Suisse case highlighted a number of important issues for the effective implementation of the international resolution framework that merit further attention as part of the future work of the FSB. Among these are the need for an effective public sector liquidity backstop and operational readiness of banks to access it as a last resort. In addition, firms and authorities need to:

(i) address the legal issues identified in the execution of bail-in across borders in the course of resolution planning,

(ii) better operationalise a range of resolution options such as transfer and sale of business tools alone or in combination with bail-in, and

(iii) understand the impact of bail-in on financial markets.

Additionally, the Credit Suisse case shows that authorities should continue to prioritise testing and simulating effective decision making and execution at domestic and international levels.

They should also extend their communication and coordination efforts outside of the core CMG.

This review reaches the conclusion that recent events demonstrate the soundness of the international resolution framework in that it provided the Swiss authorities with an executable alternative to the solution that they deemed preferable in this particular case.

While the report identifies several areas for further analysis and improvements in the operationalisation and implementation of the G-SIB resolution framework, this review upholds the appropriateness and feasibility of the framework, rather than presenting issues that would question the substance of the Key Attributes themselves.

To read more: https://www.fsb.org/wp-content/uploads/P101023.pdf

IAIS Newsletter October 2023

Read the latest news from the IAIS.

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Calendar Notes

Stay tuned for real-time updates on our LinkedIn page during the upcoming IAIS Annual Conference in Tokyo.

Access to Insurance Initiative (A2ii) Report

To read more: https://www.iaisweb.org/uploads/2023/10/IAIS-Newsletter-October-2023.pdf

The European Commission welcomes the final agreement on a EU Digital Identity Wallet

The Commission welcomes the final agreement reached today by the European Parliament and the Council of the EU at the final trilogue on the Regulation introducing European Digital Identity Wallets.

This concludes the co-legislators' work implementing the results of the provisional political agreement reached on 29 June 2023 on a legal framework for an EU Digital Identity, the first trusted and secure digital identity framework for all Europeans.

This marks an important step towards the Digital Decade 2030 targets on the digitalisation of public services.

All EU citizens will be offered the possibility to have an EU Digital Identity Wallet to access public and private online services in full security and protection of personal data all over Europe.

In addition to public services, Very Large Online Platforms designated under the Digital Services Act (including services such as Amazon, Booking.com or Facebook) and private services that are legally required to authenticate their users will have to accept the EU Digital Identity Wallet for logging into their online services.

In addition, the wallets' features and common specifications will make it attractive for all private service providers to accept them for their services, thus creating new business opportunities.

The Wallet will also facilitate service providers' compliance with various regulatory requirements.

In addition to securely storing their digital identity, the Wallet will allow users to open bank accounts, make payments and hold digital documents, such as a mobile Driving Licence, a medical prescription, a professional certificate or a travel ticket.

The Wallet will offer a user-friendly and practical alternative to online identification guaranteed by EU law.

The Wallet will fully respect the user's choice whether or not to share personal data, it will offer the highest degree of security certified independently to the same standards, and relevant parts of its code will be published open source to exclude any possibility of misuse, illegal tracking, tracing or government interception.
The legislative discussions have strengthened the ambition of the regulation in a number of areas important for citizens.

The Wallet will contain a dashboard of all transactions accessible to its holder, offer the possibility to report alleged violations of data protection, and allow interaction between wallets.

Moreover, citizens will be able to onboard the wallet with existing national eID schemes and benefit from free eSignatures for non-professional use.

Next Steps

The agreement reached by the co-legislators is now subject to formal approval by the European Parliament and the Council.

Once formally adopted, the European Digital Identity framework will enter into force on the 20th day following its publication in the Official Journal.

Member States will have to provide EU Digital Identity Wallets to their citizens 24 months after adoption of Implementing Acts setting out the technical specifications for the EU Digital Identity Wallet and the technical specifications for certification.

These Implementing Acts – to be adopted 6 and 12 months after adoption of the Regulation – will draw on the specifications developed as part of the EU Digital Identity Toolbox, setting harmonised conditions for implementing the wallets all across Europe.

Background

The 2030 Digital Decade policy programme sets out Europe's ambition for the digital transformation by 2030.

According to the Digital Decade targets, by 2030, all key public services should be available online, all citizens should be able to access their online health records and everyone should have access to secure privacy-enhancing eID.

The EU Digital Identity Wallet builds on the existing cross-border legal framework for trusted digital identities, the European electronic identification and trust services initiative (eIDAS Regulation).

Adopted in 2014, it provides an initial basis for cross-border electronic identification, authentication and website certification within the EU.

The Commission's proposal for an upgraded framework, on which co-legislators have reached final agreement today, will improve the effectiveness and extend the benefits of secure and convenient digital identity to the private sector and for mobile use.

Four large-scale pilots, investing more than €90 million, of which €46 million is co-funded by the Commission from the Digital Europe Programme, have started testing the EU Digital Identity Wallet in a range of everyday use-cases, including

the Mobile Driving Licence, eHealth, digital payments, and education and professional qualifications.

The pilots kicked off on 1 April 2023 and will contribute to enhancing the technical specifications of the wallet.

To read more:
https://ec.europa.eu/commission/presscorner/detail/en/ip_23_5651

Openness beats fragmentation

Andrew Bailey, Governor of the Bank of England, at the Central Bank of Ireland's 2nd Financial Services Conference, Dublin

It's a great pleasure to be in Dublin today, at the Financial System Conference, and at the Aviva Stadium – though the old-time rugby fan in me has to be reminded not to say Lansdowne Road.

I am going to use my time today to talk about openness and the risk of fragmentation, both in the world economy and the financial system. Ireland is one of the most open economies in the world, and the UK is also an open economy. I will say at the outset, to avoid any doubt, that I am a strong advocate of free trade and open economies.

It can sometimes be challenging when the economy is exposed to big external shocks – and we have been experiencing, and sadly continue to do so, some very big ones of late - but there are very substantial and continuous benefits from free trade, investment and open markets both in goods and in financial services.

That said, we have to recognise that today we live in a world economy which is experiencing fragmentation, and that is at risk of further such pressure.

The World Trade Organisation has recently reported that the share of so-called intermediate goods in world trade – these are the goods that form inputs to the final product – fell to 48.5% in the first half of this year, compared to an average of 51% in the previous 3 years. This is an indicator of pressure on global supply chains.

Covid was an important first shock to the supply chain system, and I will include in this the disruption to global supply chains that we saw in the early part of the recovery from the severe initial impact of Covid on the world economy. It means that extended just-in-time supply chains have moved from being a perceived source of strength to a perceived vulnerability, hence the reduction in the share of trade accounted for by intermediate goods.

This is not, however, the end of the story on fragmentation in the world economy.

Russia's illegal and utterly reprehensible invasion and war on Ukraine has been a further source of economic disruption and fragmentation – notably in energy and food supplies – which has seriously disrupted supply chains and economic conditions.

Let me also add a comment which relates to events nearer to home. As a public official I take no position on Brexit per se. That was a decision for the people of

the UK. It has led to a reduction in the openness of the UK economy, though over time new trading relationships around the world should, and I expect will, be established. Of course, that requires a commitment to openness and free trade.

To sum up this part of the story: we have moved from a state of affairs where the orthodoxy was to open up the world economy, to increase trade flows, and increase the flows of finance to support this trade. In doing so, yes there was an increase in interlinkages and dependencies around the world economy. Some of those interlinkages turned out to be less resilient than we had expected.

We can't ignore that for the sake of free trade idealism, because the threats that are behind it are sadly real. But, nor must we give up on openness. Diversifying supply chains to increase resilience does not need to involve protectionism. Let me end this part of my remarks on a note of optimism. Recently, as part of my regular visits around the country, I was in Newry in Northern Ireland meeting firms and schools.

It was a most enjoyable day, and I came away with a real sense of optimism of businesses taking up the opportunities of open economies.

This conference is about the financial system, so in the rest of my remarks I am going to focus on openness in the world of financial services. The theme will however be the same, openness is a good thing. But in the world of regulated industries, we have to set out carefully what we mean and how it works.

Just as reducing openness does the same thing to economic growth, so fragmentation damages financial markets. But it doesn't just reduce the size of markets, it makes them inherently less stable. Fragmentation is a risk to financial stability.

Put simply, large markets and their infrastructures, which are run safely and to high standards, will support rather than endanger financial stability. A very good example of this is clearing and central counterparties. Fragmenting this type of market infrastructure creates rather than reduces risks in markets. It also increases the cost of market functioning.

I want to focus a little bit on the point about whether there is, or is not, good reason to restrict and fragment. Inevitably, with such financial infrastructures, they have to be located in a single place, and become the responsibility of that place in terms of their safety, soundness and stability. Yet they are, as the IMF has rightly said, a global public good.

So, the responsibility of those who operate and regulate such infrastructures is a large one, and one that must hold good at all times. This requires accountability and transparency. Likewise, it is important to have global standards for the operation and oversight of such infrastructures, and strong co-operation among the interested countries – not just where the operator is located but also those where firms which use the infrastructure and depend on it are located.

The UK – as home to multiple financial infrastructures which are systemic outside the UK, including some of the world's largest clearing houses – takes these responsibilities very seriously. And we have recently enshrined in law our commitment to consider the effects of UK standards on the financial stability of countries where our clearing houses provide services.

A necessary foundation for such openness in the financial system more broadly is robust global standards and trust. I think we have made huge steps forward on this front since the global financial crisis. The standards and expectations are stronger, and the co-operation is real and deep-seated.

At the heart of this is the global Financial Stability Board, and the so-called standard setting bodies, the Basel Committee for banks, CPMI and IOSCO for payments, infrastructure, securities and investment markets, and the IAIS for insurance. Our two central banks, in Ireland and the UK, work very closely together in these bodies.

The consequence of all this activity is much stronger standards, and in my view an overwhelming case for rejecting the false allure of fragmentation.

To read more:
https://www.bankofengland.co.uk/speech/2023/november/andrew-bailey-keynote-address-at-the-central-bank-of-ireland

The European Commission adopts the 2024 Commission Work Program

'Together, we have shown that when Europe is bold, it gets things done. And our work is far from over, so let's stand together. Let's deliver today and prepare for tomorrow.'
European Commission President Ursula von der Leyen, State of the Union speech, 13 September 2023.

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Commission work programme 2024

Delivering today and preparing for tomorrow

Next June, Europeans will take part in the continent's biggest democratic exercise. Among the more than 400 million people eligible to vote for the new European Parliament will be many young people who are exercising their democratic rights for the first time – including, in five Member States, 16- and 17-year-olds.

The results will set Europe on its path for the subsequent five years and beyond, with the election coming at a crucial juncture in Europe's history.

We are faced with a number of epoch-making challenges and opportunities. From the climate and biodiversity crises to the digital revolution and artificial intelligence; from Russia's brutal invasion of Ukraine to the ensuing energy price and cost of living crises; from migration to ensuring economic growth and competitiveness.

At the start of the mandate, this Commission laid out an ambitious agenda for a stronger and more resilient Union.

We committed to bold action to be the first climate-neutral continent and preserve Europe's natural environment, to lead the way towards a human-centered and innovative digital transition, to boost our economy while ensuring social fairness, inclusion and prosperity, to reinforce our responsible global leadership, to protect our citizens and our values, and to nurture and strengthen our democracy.

The world is a very different place compared to 2019, however. As a Union, we have had to react and adapt in the face of unprecedented challenges, remaining united in our responses and refusing to back away from delivering on our ambitions.

We have accelerated the twin green and digital transitions, put in place the landmark NextGenerationEU, strengthened the EU's role as a global leader and promoted the values that lie at the heart of our societies, such as democracy and the rule of law.

Through our Economic Security Strategy, we seek to reap the benefits of the EU's economic openness, while minimising risks arising from increased geopolitical tensions and accelerated technological shifts.

The clock is now ticking on our work to finalise the remaining key legislative proposals presented by this Commission to ensure that citizens and businesses can take full advantage of our policy actions.

To this end, in the coming months, the Commission will support the European Parliament and the Council in their efforts to reach agreement on pending legislative proposals.

To allow sufficient focus for this task, and with most of the necessary legislative framework promised under this mandate already in place, this work programme contains a limited number of new initiatives that deliver on existing commitments or respond to emerging challenges.

The EU's economy has continued to show resilience despite the challenges we have faced supported by our efforts to strengthen our energy security, a resilient labour market and the easing of supply constraints.

The European Green Deal, our world-leading effort to tackle climate change and biodiversity loss and Europe's growth agenda, remains a central part of the Commission's work.

While the main focus is now on implementation, we are coming forward still this year with proposals on the protection of animals during transport, preventing microplastic pollution, improving forest monitoring and a mobility package.

We will also maintain our efforts to set the course towards a human-centered, sustainable and more prosperous digital future with the Digital Decade.

NextGenerationEU will remain key to ensuring secure, affordable and clean supplies of energy, the competitiveness of European industry, social

and territorial cohesion and the transition to a net-zero, circular and nature-positive economy.

The Commission will support all Member States in accelerating the implementation of their recovery and resilience plans, in line with the country-specific recommendations under the European Semester, including their REPowerEU chapters.

Early next year we will present an interim evaluation on the implementation of the Recovery and Resilience Facility.

To promote more jobs and investments in Europe we will also continue work to accelerate the deployment of renewable energy while keeping energy prices under control, to ensure supplies of key strategic commodities such as critical raw materials and clean hydrogen, and to reduce administrative burden, in particular in relation to reporting in line with our strategy to boost the EU’s long-term competitiveness.

At the same time, we need to finish building an economic governance framework fit for the challenges ahead.

This means finding agreement on the Commission’s proposals on reforming governance rules and strengthening debt sustainability and on promoting sustainable and inclusive growth through reforms and investment.

Together with the Belgian Presidency, the Commission will convene a Social Partner Summit in Val Duchesse to discuss the challenges facing our labour markets, workers and businesses, including from skills and labour shortages, and artificial intelligence.

The challenges over the past years have underlined the strengths and capabilities of our Union. But they have pushed the EU budget to the point of exhaustion despite its in-built flexibilities and extensive reprogramming.

To counter this, we tabled a proposal to reinforce the longterm EU budget to be able to address the most imminent needs, which provides for a targeted increase in EU spending to deepen our support for Ukraine, finance our action on migration, bolster the Union’s capacity to respond to heightened economic and geopolitical instabilities, humanitarian crises and natural disasters, and boost investments in strategic technologies to foster long-term competitiveness.

In line with the negotiations on the long-term EU budget for 2021-2027, we put forward an adjusted proposal for new own resources to help finance the repayment of NextGenerationEU borrowing.

The New Pact on Migration and Asylum remains the structural response the EU needs to tackle migration challenges in the future.

Its adoption is a key priority as work needs to start already next year to prepare for its swift implementation.

With the brave resistance of the Ukrainian people against the invading Russian forces continuing unabated, the EU will not waver in its solidarity with Ukraine.

So far, the Union and its Member States have provided, in a Team Europe approach, EUR 82 billion in total support, including humanitarian aid, military equipment and training, material goods for civilian use, including generators, school buses, medical items and evacuations, rebuilding cities in a high-quality, sustainable and inclusive way, help for children and to rehabilitate damaged schools, and economic support.

This support is provided in coordination with our international partners within the Multi-agency Donor Coordination Platform for Ukraine launched in January 2023 following a decision of G7 leaders.

The Commission hosts the secretariat of the platform that facilitates close coordination among international donors and financial organisations and ensures coherent, transparent, and accountable support.

The EU-Ukraine Solidarity Lanes have helped Ukraine export over 57 million tonnes of agricultural goods and almost 45 million tonnes of non-agricultural products, and import goods the country needs.

Through the Joint Coordination Platform, the Commission will spare no efforts to facilitate the timely and stable delivery of Ukrainian agricultural products to global markets.

The Commission condemns Russia's decision to terminate the Black Sea grain initiative and will continue to support all efforts to mitigate security and safety risks to shipping in the Black Sea.

The Council adopted the Commission's proposal to extend the temporary protection for people fleeing Russia's aggression against Ukraine until 3 March 2025.

Together with the CARE and FAST-CARE initiatives, this will provide certainty and support for more than 4 million persons enjoying protection across the EU.

The EU also adopted in record time several emergency initiatives during the course of 2022 to mitigate the effects of the energy crisis on industry and households.

Finally, to underscore the EU's commitment to stand by Ukraine as long as is necessary, we will create a facility to provide support to Ukraine to the tune of up to EUR 50 billion in the period 2024-2027.

This funding will cater for Ukraine's immediate needs, as well as bolstering its recovery, and supporting its modernisation on its path towards EU membership.

Together with our international partners, we have taken steps to ensure war crimes committed in Ukraine by Russia are punished and that Russia compensates for the damage it has done.

The International Centre for the Prosecution of the Crime of Aggression against Ukraine has started its operations in The Hague and will be key to investigating these horrific acts and facilitating the building of cases for future trials.

We will leave no stone unturned to hold those responsible to account. And we are continuing work on the possible use of proceeds from seized Russian assets for Ukraine's reconstruction.

The Union must prepare for its successful enlargement in order to foster long-term peace and stability in Europe.

We will work closely with our partners as they prepare for this momentous step, including opening the Commission's Rule of Law Reports to those accession countries who get up to speed even faster.

The EU also needs to be ready. The Commission will put forward a Communication on preenlargement reforms and policy reviews to see how each policy would be affected by a larger Union and how the European institutions would work.

To read more: https://commission.europa.eu/publications/2024-commission-work-programme-key-documents_en

Multiple Scenarios in Stress Testing

Michael S. Barr, Vice Chair for Supervision, Federal Reserve System, at the Stress Test Research Conference at the Federal Reserve Bank of Boston, Boston, Massachusetts

Thank you for the opportunity to speak today. I'm here to offer my thoughts on the next steps for stress testing, and in particular why using multiple exploratory scenarios will help improve our understanding of risk in the banking system.

The stress test as we know it today grew out of the 2009 Supervisory Capital Assessment Program, or SCAP, conducted in the heat of the global financial crisis. In the winter of 2008–09, markets had lost confidence in banks amid wide uncertainty about the future path of the economy and the losses banks could face.

This prompted the Federal Reserve and Treasury to conduct a stress test to determine the health of the 19 largest banks under a severely adverse economic scenario and to publish the findings.

The release of the results provided transparency about the status of the largest banks, made it easier for firms to re-capitalize themselves, and restarted the provision of credit to the economy that began the process of recovery.

Following the success of this stress test, Congress mandated in the Dodd-Frank Act that the Federal Reserve conduct an annual stress test of large banks to determine whether those banks have sufficient capital to absorb losses under adverse economic conditions.

And today this test—as well as the data collection that supports it—is one of our primary tools to assess and to help ensure banks' resilience, in good times and bad. During periods of economic or financial uncertainty, stress tests can provide critical assessments of bank resilience to supervisors, the market, and policymakers. This transparency helps enable markets to function better in times of stress.

Outside of stressful periods, stress tests can help to assess sufficient capitalization and improve supervisory insight into risks. The stress test also can provide transparency into the build-up of risks across banks.

In our experience, the test results have given supervisors valuable information to provide feedback to individual firms and helped the Board assess the stability of the financial system. A recent study confirms this experience, finding that banks subject to the stress test were less exposed to common systemic risks.

In addition, the stress test helps to make capital requirements less susceptible to gaming by firms and therefore more likely to be set at adequate levels.

This is so because the design of the scenario can change based on our observations of growing risks in the system. The scenario framework, by using parameters that become stricter when the economy is stronger, also helps to avoid exacerbating the natural tendency for banks to take larger risks during good times and become highly risk averse during bad times.

Furthermore, stress tests change in response to improved modeling and evolving risks, so that the tests better estimate potential losses in a downturn.

Over the past 14 years, we have learned from our experiences and continued to evolve the stress testing program.

We have taken steps to increase the transparency of the stress testing program, including to publish an extensive description of our approach to model development, implementation, and validation, as well as our approach to scenario design.

In connection with each stress test, we disclose a detailed summary of the stress test methodology, and for several key portfolios, disclose our approach to modeling loss rates, summary statistics, and modeled loss rates.

In 2020, we adopted the stress capital buffer, which uses the results of the stress test to inform a firm's capital buffer requirements.

The program also provides banks with the opportunity to request reconsideration of their stress capital buffer.

While our stress test is an important measure of the strength and resilience of the banking system, we must recognize that it does have limitations, as does any exercise.

I'll walk through three limitations and explain how they can be at least partially mitigated by incorporating multiple exploratory scenarios into our stress test program.

What I mean by an exploratory scenario is a scenario that is not used to set a firm's stress capital buffer requirement.

I'll then describe how the Federal Reserve could use the results of exploratory scenarios to help ensure the banking system remains strong and resilient, by allowing us to better understand potential risks and improve our supervision of those banks.

As we move forward, we must remain cognizant that none of us can predict future stressful events and their consequences with confidence.

Limitations of Stress Testing

First, the current stress test uses a single scenario that is focused on a credit-driven recession and single global market shock to test the financial condition of firms.

A single scenario cannot cover the range of plausible risks faced by all large banks. This has been confirmed time and time again, including in recent experience.

The failures of three large banks last spring showed that acute banking strains can emerge even without a severe recession. Yet, conditions such as those recently experienced presented challenges for the design of the supervisory stress scenario.

Most notably, the Federal Reserve's stress testing policy statement—which governs how the hypothetical scenarios are determined—requires that the severely adverse scenario include a rapid increase in the unemployment rate to at least 10 percent, as well as steep declines in house prices.

Such conditions are historically associated with subdued inflation and a fall in interest rates. The fact that significant banking stress emerged in very different conditions underscores the limitations of our current stress testing processes.

We also do not take into account second-order effects of stress within the financial system, which are channels that amplify the effects of the shocks hitting bank's balance sheets, leading to losses spreading throughout the financial system.

A good example of this is the reaction of funding markets to stress at an individual firm or many firms. These network effects may result in losses across the system not fully captured by our stress tests.

While the severely adverse scenario is calibrated to historical recessions that have included contagion, our stress tests may not fully capture the evolving interconnections in today's financial system.

The second limitation involves our models. In developing supervisory models, Federal Reserve staff draw on economic research and industry practice; the models are also independently validated by a group of experts outside of the stress testing program.

However, all models have limitations—they are generally trained on historical data and therefore may not be robust to structural breaks, such as a once-in-a-lifetime pandemic, or important changes in technology.

Expanding the range of risks captured in the stress test makes models more robust to these limitations but will not address them completely.

The third limitation is how the stress test affects bank behavior. Using scenarios that test for the same underlying risks year after year could disincentivize firms from investing in their own risk management as the test becomes predictable, and may encourage concentration across the system in assets that receive comparably lighter treatment in the test. Additional exploratory stress test scenarios could allow supervisors to better probe the internal risk management of firms and assess whether they are holding sufficient capital for their risks.

We find that firms often use a large number of scenarios and shocks when running their own internal stress testing processes, and our regulatory counterparts use a number of scenarios as well.

Expanding the Risks Captured in the Stress Test

Exploratory stress test scenarios could mitigate these and other risks. The goal of stress testing should be to provide sufficient coverage of the types of severe but plausible scenarios that could adversely impact a bank's operations, and the combination of scenarios and shocks should be curated to achieve this goal.

This doesn't imply a large number of scenarios. Given the limited number of unique bank business models and variables that drive losses, a relatively small number of scenarios may be all that is required to capture a wide range of outcomes for the banking system.

On the macroeconomic side, additional scenarios could be used to explore the effects of qualitatively different macroeconomic and financial environments. For example, instead of the usual demand-driven recession, a scenario could explore the impact of an inflationary shock to supply.

Potentially, an exploratory scenario could probe the interplay between capital and liquidity, to help ensure firms understand their capital exposure to rapid changes in the composition or pricing of their liabilities.

With respect to market risk, the current single market shock used in the test is a one-time shock to several thousand variables in bank trading books. This is just one realization of a large set of risk factors that determine changes in market values.

Using additional market shocks would help us understand how the trading books and counterparty concentrations of firms would change under a range of financial conditions. This could include testing the exposure of firms to different directional risks, such as a sudden rise or fall in certain asset values, or to an unexpected divergence in values of correlated assets.

It is particularly important for us to consider a range of market shocks because some concentrated counterparty exposures may be revealed only under certain scenarios.

To advance the goal of improved testing of market risk, last year, for the first time, we introduced an additional, exploratory market shock component. As

compared to the global market shock, the exploratory market shock was characterized by a less severe recession with greater inflationary pressures.
As we explained in our results disclosure, banks generally looked better under the exploratory market shock, experiencing smaller trading and counterparty losses in the exploratory market shock than under the global market shock.

This is valuable information to us and the public, since it suggests that these banks' trading and counterparty exposures may not be an unexpected source of vulnerability during a rising inflation scenario (although that test did not explore the effects of unrealized losses from interest rate risk).

The exercise also provided important insight into banks' counterparty exposures in varying conditions, since banks' largest counterparties differed between the exploratory market shock and the global market shock.

Building on these experiences, the Federal Reserve is developing both exploratory macroeconomic scenarios and exploratory market shocks for next year's stress test. As I noted above, an exploratory scenario would not be used to set a firm's stress capital buffer requirement. Instead, the exploratory scenarios will be used to inform the Board's supervisory assessments of firms' risk management and our understanding of different risks in the banking system.

Using the Additional Stress Test Results

Let me speak to how we currently use the stress test, and how we could use exploratory scenarios going forward. A current use of the stress test is to help set capital requirements for large banks to help prepare firms to withstand a severe economic recession and continue to lend and operate. The key features of the scenario used to calculate the capital requirements are generally similar from year to year.

Since the stress test is used to set each firm's stress capital buffer requirement, there is a benefit to predictability so that firms are better able to conduct capital and business planning. To the extent we were to adjust key features of the scenario used to set the capital requirements, we would do so through a transparent, public process.

However, a tradeoff with producing predictable scenarios is stifling creativity in scenario design and less bank resilience to a range of potential scenarios, and this is where exploratory scenarios can help. The use of stress scenarios and shocks that do not set a firm's stress capital buffer requirement can provide room to explore a wider range of vulnerabilities to inform risk-based supervision.

For example, if the purpose of the exploratory scenario is to inform the Board or the public about new or underappreciated risks, the Board could explore the impact of a scenario using a different set of variables than the ones it has currently defined in its policy statement.

Additional exploratory stress test scenarios could allow supervisors to better probe the internal risk management of firms and assess whether they are holding

sufficient capital for their risks. For example, the 2018 stress test revealed that one firm had highly concentrated counterparty exposures that would materialize under the hypothetical stress scenario. This led to supervisory feedback to that firm and its prompt mitigation of the concern. We should continue to enhance the feedback loop between supervision and stress testing.

We can also learn from our international counterparts, who have effectively employed exploratory stress tests. Since 2017, the Bank of England has run a biennial exploratory scenario designed to explore risks not covered by their annual capital stress test. The results of their exploratory tests are used to improve supervisory feedback related to the risk management of firms.

While the results of our stress test are informative and provide a rigorous measure of resilience, the supervisory stress test is not a replacement for a firm's own risk management or its own stress testing processes. Large banking organizations should maintain a solid line of sight into their own risks and focus their efforts to capture those risks and determine capital needs.

Our stress test is designed to provide a consistent measure of risk across firms, and is not a replacement for comprehensive modeling, risk management, and capital planning by the largest banks that enable them to measure and manage their own unique risks.

The Future Evolution of Stress Testing

Exploratory scenarios would also allow the Board to have more flexibility in its modeling approaches. For example, the Board could explicitly model the behavioral response of depositors to losses, allowing for contagion of the type we saw earlier this year, the interaction of the broader economy and the banking system under stress, or the transmission of stress through nonbank parts of the financial system.

The Bank of England's recent stress tests included a set of models to better understand how feedback and amplification channels during a stress event could drive contagion losses and exacerbate the impact of an initial shock. These feedback loops included a contagion model testing how deteriorating capital positions might impact the market for interbank lending.

Expanding the use of exploratory scenarios in the stress test would allow for more experimentation in the modeling of risks by the Board's supervisory stress test program.

Conclusion

In conclusion, forums such as this research conference are excellent sources of ideas and hypothesis testing. In thinking about the future evolution of stress tests, we would benefit from wide ranging input—from academics, other policymakers, public interest groups, bankers and other market participants.

The stress test needs to continue to evolve. Introducing multiple exploratory scenarios—both for the broader macroeconomic scenario and the global market shock for trading banks—would be beneficial for supervising potential risks on bank balance sheets.

These continued adjustments will help to ensure, consistent with the original intent of the Dodd-Frank Act, that the stress test remains a powerful and relevant tool for assessing whether large banks are resilient and our financial system is robust. Thank you.

To read more:
https://www.federalreserve.gov/newsevents/speech/barr20231019a.htm

ENISA Threat Landscape 2023

The ENISA Threat Landscape (ETL) report, now in its eleventh edition, plays a crucial role in understanding the current state of cybersecurity mainly within the European Union (EU).

It provides valuable insights into emerging trends in terms of cybersecurity threats, threat actors' activities as well as vulnerabilities and cybersecurity incidents.

Accordingly, the ETL aims at informing decisions, priorities and recommendations in the field of cybersecurity.

It identifies the top threats and their particularities, threat actors' motivations and attack techniques, as well as provides a deep-dive insight on particular sectors along with a relevant impact analysis.

The work has been supported by ENISA's ad hoc Working Group on Cybersecurity Threat Landscapes (CTL).

In the latter part of 2022 and the first half of 2023, the cybersecurity landscape witnessed a significant increase in both the variety and quantity of cyberattacks and their consequences.

The ongoing war of aggression against Ukraine continued to influence the landscape.

Hacktivism has expanded with the emergence of new groups, while ransomware incidents surged in the first half of 2023 and showed no signs of slowing down.

The prime threats identified and analysed include:

- Ransomware
- Malware
- Social engineering
- Threats against data
- Threats against availability: Denial of Service
- Threat against availability: Internet threats
- Information manipulation and interference
- Supply chain attacks

This is the eleventh edition of the ENISA Threat Landscape (ETL) report, an annual report on the status of the cybersecurity threat landscape.

It identifies the top threats, major trends observed with respect to threats, threat actors and attack techniques, as well as impact and motivation analysis.

It also describes relevant mitigation measures. This year's work has again been supported by ENISA's ad hoc Working Group on Cybersecurity Threat Landscapes (CTL).

For each of the identified threats, we determine impact, motivation, attack techniques, tactics and procedures to map relevant trends and propose targeted mitigation measures.

During the reporting period, key findings include:

• DDoS and ransomware rank the highest among the prime threats, with social engineering, data related threats, information manipulation, supply chain, and malware following.

• A noticeable rise was observed in threat actors professionalizing their as-a-Service programs, employing novel tactics and alternative methods to infiltrate environments, pressure victims, and extort them, advancing their illicit enterprises.

• ETL 2023 identified public administration as the most targeted sector (~19%), followed by targeted individuals (~11%), health (~8%), digital infrastructure (~7%) and manufacturing, finance and transport.

• Information manipulation has been as a key element of Russia's war of aggression against Ukraine has become prominent.

• State-nexus groups maintain a continued interest on dual-use tools (to remain undetected) and on trojanising known software packages. Cybercriminals increasingly target cloud infrastructures, have geopolitical motivations in 2023 and increased their extortion operations, not only via ransomware but also by directly targeting users.

• Social engineering attacks grew significantly in 2023 with Artificial Intelligence (AI) and new types of techniques emerging, but phishing still remains the top attack vector

To read more: https://www.enisa.europa.eu/publications/enisa-threat-landscape-2023

Digitalisation is essential for the Capital Markets Union

Dr. Thorsten Pötzsch, BaFin's Chief Executive Director for Securities Supervision

Note: The German Federal Financial Supervisory Authority (BaFin) brings together under one roof the supervision of banks and financial services providers, insurance undertakings and securities trading. It is an autonomous public-law institution and is subject to the legal and technical oversight of the Federal Ministry of Finance. It is funded by fees and contributions from the institutions and undertakings under its supervision.

The Capital Markets Union is designed to make Europe more competitive. We urgently need to make progress on this project in order to promote investment and foster innovation.

Digitalisation gives crucial impetus for further advancing the Capital Markets Union project. Nearly half of all ongoing or planned regulatory projects addressing digitalisation have an impact on the capital market.

In other words: it is hardly possible to regulate capital markets without accounting for digitalisation. This also means that simply making progress on the Capital Markets Union will not be enough – we need a digital Capital Markets Union.

Digitalisation enables us to process information and transactions more quickly. It also facilitates access to capital for companies and investors across Europe and increases transparency on financial markets. Digitalisation has the potential to reduce complexity.

We should not waste this potential with overambitious legislation. Yet, we are at risk of doing just that with the digital Capital Markets Union. Instead, we should reduce the complexity of the project.

In my view, the strategy of addressing difficult questions with even more complex legislation is wrong. It can trigger unmanageable levels of complexity that impede innovation.

Europe must become a more attractive and secure business location for financial services providers. We will not succeed if we pursue regulation as an end in itself. We need simple and clear laws: rather than a regulatory straitjacket, rules should set principles pointing in the right direction.

This generates certainty for all stakeholders and keeps bureaucracy to a minimum. Everyone knows that a decisive factor in business decisions – not least the question of where to set up shop – is the time required for bureaucratic processes in a given location. In Europe as a whole, but also in Germany, we need to gain speed in this regard.

We want to establish a market in which all players are able to access reliable information across borders with an appropriate level of regulation and supervision.

If we succeed in doing so, we will create a European capital market that attracts capital flows from around the world – even in the digital age.

To read more: https://www.bafin.de/ref/19681964

What is the Capital Markets Union of the EU?

The capital markets union (CMU) is a plan to create a single market for capital.

The CMU is the EU's plan to create a truly single market for capital across the EU. It aims to get investment and savings flowing across all Member States, benefitting citizens, investors and companies, regardless of where they are located.

A fully functioning and integrated market for capital will allow the EU's economy to grow in a sustainable way and be more competitive. An economically stronger Europe will better serve its citizens and help the EU play a stronger role on the global stage.

The CMU is essential for delivering on all of the EU's key economic policy objectives: post-COVID-19 recovery, an inclusive and resilient economy that works for all, the transition towards a digital and sustainable economy, and strategically-open autonomy in an increasingly complex global economic context.

Meeting these objectives requires massive investment that public money and traditional funding through bank lending alone cannot deliver.

Only well-functioning, deep and integrated capital markets can provide the scale of support needed to recover from the crisis and power the transition. The CMU is not a goal in itself, but a fundamental policy to progress on key European priorities.

The CMU has become more urgent in light of the crisis induced by COVID-19. Public support and bank loans have helped households and businesses stay afloat by addressing the short-term liquidity squeeze caused by lock-downs.

In order to stay solvent in the medium- and longer-term, however, businesses need a more stable funding structure. The EU's industry, in particular SMEs that are the backbone of our economy, needs more equity to recover from the economic shock and become more resilient.

Building the CMU takes time. Efforts to put in place a single market for capital started with the Treaty of Rome, but this objective has not yet been achieved. The 2015 action plan sets out some of the necessary measures to establish a CMU, and many of them have now been agreed and are being implemented.

This is, however, not enough. Progress on some controversial issues has been slow. There are still significant barriers to a well-functioning CMU in many areas, including supervision, taxation and insolvency laws. These barriers are driven by history, customs and culture. They are deep-rooted, and will take time to tackle.

There is no single measure that will complete the CMU. The only way to progress is to move step by step, in all areas where barriers to the free movement of capital still exist.

This requires commitment and determination from all parties. Since building the CMU is a gradual process, based on making many small but important changes, it is important not to lose sight of the global CMU vision.

The CMU vision

The CMU should bring value to all Europeans, wherever they live and work. It should bring benefits already being enjoyed in the larger established financial centres to people in the smaller Member States. Businesses, including small- and medium-sized ones, should be able to access funding and investors should be able to invest in projects across the EU.

Capital should flow to where it can be most useful and help meet long-term societal needs, in particular in view of the green and digital transition. Market participants should benefit from competitive and transparent markets. Access to information and infrastructure should be efficient and non-discriminatory.

Consumers should have more choice as regards their savings and investments and should be well informed, including on sustainability aspects, and appropriately protected wherever they are.

The choice of financial products and services should not depend on traditions or market power but be the result of a competitive choice. There should be no explicit or implicit barriers to cross-border investment.

Obstacles due to national differences in laws and law enforcement, taxation and supervision should be reduced and not impede the free flow of capital. Investment decisions should be governed by a single rulebook – the same set of rules applicable directly and in the same manner to all market operators, irrespective of where they are located.

Why is the CMU even more important now?

1. Recovery

Today, the EU's top priority is to recover from the unprecedented economic crisis caused by the COVID-19 outbreak. The Commission has put forward Next Generation EU 6 - an emergency temporary recovery instrument to help repair the immediate economic and social damage brought by the COVID-19 pandemic, kick-start recovery and prepare for a better and greener future for the next generation.

In addition, European institutions and Member States have taken extraordinary measures and injected public funds on an unprecedented scale to tackle the public health emergency, protect people's jobs and incomes, and keep businesses afloat.

Banks have so far broadly continued lending to businesses. However, this financing – despite being absolutely essential for Europe's short-term recovery – will not be sufficient given the magnitude and expected duration of financing needs. Market financing will be the lifeblood that sustains the recovery and future growth over the long-term.

The CMU is also important for the EU recovery plan. Deep and liquid capital markets will be needed for the Commission to raise the necessary funding for the EU. At the same time, such a large issuance is an opportunity for the EU financial system: it can attract more investors and issuers globally to euro denominated financial instruments, thereby promoting the international role of the euro.

Governments, regions and municipalities will also need deep and liquid markets to raise the funds they need to support the economy, invest in public infrastructure and address the social needs arising from the crisis.

The CMU is also essential for mobilising private investment in companies and complementing public support. It brings a variety of funding alternatives, reduces dependence on a single source or single provider of financing and reduces the funding gap. Companies of all sizes – and in particular SMEs – need solid market-based funding sources.

This was already the case before COVID-19, but will be even more important for the recovery when bank lending may no longer be sufficient. COVID-19 is likely to lead to the restructuring of many companies. Insufficient and inadequate financing and the lack of equity in the funding structure weakens companies and will slow down recovery, putting Europe at a disadvantage compared to other economies with more diversified funding structures.

Finally, the CMU is essential for building resilience against future asymmetric shocks affecting only a few Member States. By laying down strong foundations for better and more geographically spread private risk sharing, the CMU supports the functioning of the Banking Union and the Economic and Monetary Union. Completion of the Banking Union will also support a more rapid integration of European capital markets.

2. Green transition and digital transformation

Tackling the climate and biodiversity emergencies and rising to broader environmental challenges requires enormous investments that the CMU can help mobilise and channel.

The European Green Deal is the EU's new growth strategy and the roadmap for making the EU's economy sustainable. It is estimated that, compared to the previous decade, an additional EUR 350 billion of energy-related investment will be necessary each year to meet the target of reducing greenhouse gas emissions by 55% in 2030.

The European Green Deal Investment Plan aims to boost sustainable investment. But public funds will not be sufficient to meet these financing needs. An efficient single market for capital is needed to mobilise the necessary funds and to ensure that sustainability considerations are rigorously incorporated in financing decisions.

The Commission will put forward a renewed sustainable finance strategy to increase private investment in sustainable projects and activities. Backed by deep capital markets, this strategy will support the actions set out in the European Green Deal to manage climate and environmental risks and integrate them into the EU's financial system.

Digitalisation will also continue to require significant private investment if the EU's economy is to remain competitive globally. As already stated in the EU strategy on 'shaping Europe's digital future', innovative companies need funding that only capital markets can provide.

This is partly because many of these companies lack the physical collateral required for bank loans. This adds to the urgency of deepening the CMU. Mastering technological advancement is also critical for the EU's financial sector to gain in efficiency, to improve access to capital and to be able to better serve Europe's people, as well as to remain competitive globally. The Commission is putting forward a digital finance strategy that seeks to harness the potential of digital finance in terms of innovation and competition, while mitigating risks.

SMEs must be supported in their efforts to meet the objectives of the green and digital transitions. The CMU will improve the opportunities for SMEs to access funding and thus will contribute to meeting the objectives of the EU's March 2020 SME strategy for a sustainable and digital Europe.

The strategies on CMU, sustainable finance, digital finance and SMEs are all mutually reinforcing. They are a joined-up package of measures to strengthen Europe's economy and make it more competitive and sustainable, and to better serve its people and companies.

3. A more inclusive economy

The CMU is also important for creating a more inclusive and resilient economy and society. The ability to make the economy work for the people relies on integrated capital markets and on adequate incentives to promote investments in socially and environmentally sustainable activities.

Deep and integrated markets facilitate an efficient allocation of capital and play a useful role in times of societal change. They support growth and employment and thus contribute to people's financial well-being.

The CMU can also help meet the challenges posed by Europe's ageing populations. Strong market-based pension systems have the potential to supplement public pensions and better cater for the needs of ageing populations, provided they are designed in a broad and inclusive manner.

They would thereby contribute to an adequate and sustainable income at old age. The more developed the capital markets are, the easier people's access to financial products and solutions that match their needs and preferences. The CMU aims to put capital markets at the service of people, offering them both sustainable investment opportunities and strong investor protection.

The retail investment strategy, which the Commission will present in the first half of 2022, should focus on the interests of individual investors. It will seek to ensure that retail investors can take full advantage of capital markets and that rules are coherent across legal instruments. An individual investor should benefit from:

(i) adequate protection,

(ii) bias-free advice and fair treatment,

(iii) open markets with a variety of competitive and cost-efficient financial services and products, and

(iv) transparent, comparable and understandable product information. EU legislation should be forward-looking and should reflect ongoing developments in digitalisation and sustainability, as well as the increasing need for retirement savings.

4. EU's global competitiveness and open strategic autonomy

A CMU allows smaller capital markets to catch up with larger and more developed ones and local firms to grow into global players. It has the potential to make Europe's economy more innovative and competitive so that it can face global competition head on. Larger and more integrated markets contribute to making the EU a larger and deeper market for capital overall, benefitting domestic investors and making it more attractive to foreign investors.

This serves not only large firms that are already active on global markets. It also presents significant opportunities for smaller local firms with promising business models, who can thus attract global investors and receive the necessary capital to scale up and build brand recognition. A large and truly integrated single market for capital, supported by adequate taxation rules 10 , will be the ground on which EU financial firms can grow and strengthen to become truly competitive globally.

A CMU is a precondition for a stronger international role of the euro and Europe's open strategic autonomy. A widely used currency in international transactions relies on the existence of large, liquid, deep and dynamic domestic financial markets underpinned by credible and sustainable monetary, fiscal and regulatory policies.

A vibrant, integrated and deep capital market will make Europe more attractive to global investors and foster the inflow of foreign capital. It will increase the weight of euro-denominated securities in global finance and strengthen the resilience of EU market infrastructure.

Brexit has a significant impact on the CMU. It further strengthens the need for the EU to have well-functioning and integrated capital markets. EU capital markets consist of multiple financial centres of a varying size and specialisation. An enhanced single rulebook and effective supervision will be crucial to prevent regulatory arbitrage, forum shopping, and a race to the supervisory bottom.

EU influence in shaping international rules and standards also depends on the development of strong domestic markets. The EU needs to develop its own critical market infrastructure and services. Well developed markets are a necessary condition for the EU's financial and economic autonomy.

This goes hand-in-hand with the promotion of a stronger international role for the euro. At the same time, it is important that the EU stays open to global financial markets, to attract investors and support the global competitiveness of European firms.

The European Commission, on 24 September 2020, adopted a new CMU action plan: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0590

To read more: https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/capital-markets-union_en

The Second Quantum Revolution: the impact of quantum computing and quantum technologies on law enforcement

Quantum computing and quantum technologies hold significant potential to improve a wide range of applications and tasks.

At the same time, recent technological progress in this field, also referred to as the 'Second Quantum Revolution', is threatening to break the encryption we use to keep our most sensitive information safe.

The purpose of this report is to provide a forward-looking assessment of the impact of quantum computing and quantum technologies from the law enforcement perspective.

In offering an extensive look at the wide range of potential applications in this context, this report is the first of its kind.

The report is the result of a collaborative effort of the European Commission's Joint Research Centre (JRC), Europol's European Cybercrime Centre (EC3), and the Europol Innovation Lab.

Area	Law enforcement	Criminals
General	Raise awareness on the threat of quantum computers and stay abreast of technological developments to combat risks at the earliest stage possible. Ensure law enforcement is leveraging the latest technology.	Reconsider their current modi operandi and identify potential to abuse availability of quantum computers.
Store now, decrypt later	Hold on to currently inaccessible encrypted data resulting from criminal investigations with a view to later decryption.	Accumulate and store encrypted information (for instance obtained from data breaches) with a view to later decryption.
Quantum password guessing	Significantly improve their technical ability to access password-protected data and devices from criminal investigations.	Be pushed to find alternative solutions for secure communications or increase operational security by using stronger passwords and multi-factor authentication. More easily hack into password-protected data and devices.
Digital forensics	Use new side-channel attacks and fault injection vulnerabilities to improve ability to gain access to criminal devices.	Employ counter measures or identify alternative technological solutions to increase operational security.
Post-quantum cryptography	Put into place transition plans to post-quantum cryptography for own data storage.	Switch to quantum-safe solutions.

It aims to inform decision-makers, policy-makers, and practitioners on the benefits and threats stemming from quantum computing and quantum technologies.

Metrology & sensors

PRECISION FORENSICS

IMPROVED SURVEILLANCE & DETECTION

REAL-TIME DECISION MAKING

The report provides an update on the current state-of-play, and offers concrete recommendations to better prepare for the future.

Quantum computing and quantum technologies have the potential to revolutionise the work of law enforcement.

One of the most immediately significant areas quantum computers will impact is cryptography. As such, a large part of the cryptographic protocols currently used are threatened by the arrival of quantum computers. This includes both symmetric and asymmetric cryptography.

While symmetric cryptography can be relatively easily patched, widely used asymmetric cryptography would collapse entirely if subjected to this process.

The realisation that quantum computers pose a significant threat to currently used cryptography has led to post-quantum cryptography, which aims to keep sensitive information secure from this emerging threat.

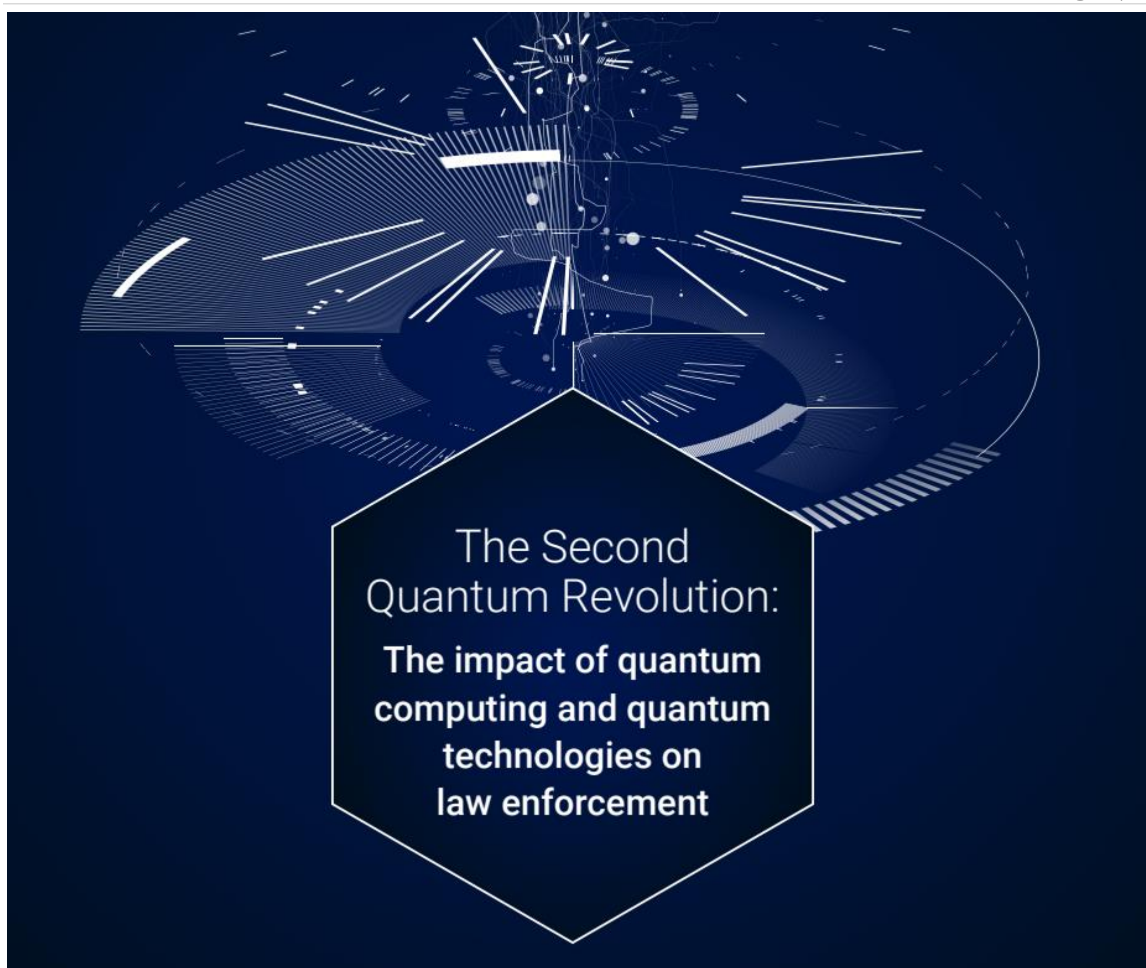
From the perspective of law enforcement, post-quantum cryptography has two major areas of impact.

First, law enforcement agencies need to prepare already to ensure that sensitive information and systems are protected adequately.

Second, the transition to post-quantum cryptography might reveal new vulnerabilities that could be exploited in the future.

At the same time, the impact of quantum computing in this field offers numerous potential advantages for law enforcement.

As such, quantum computers can support the investigation of cold cases, improve password guessing, and allow for new digital forensics techniques.



In addition to the impact quantum computing will have on cryptography, the overall field of quantum technologies is expected to bring significant advancements across several other areas.

This includes improvements in data analysis, machine learning and artificial intelligence, which may benefit from quantum algorithms to process large amounts of data at scale.

Quantum communications can enable the establishment of highly secure communications channels through which sensitive law enforcement data can be transmitted.

Finally, quantum sensors can improve the reliability of evidence, decrease the chance of wrongful convictions, and improve the surveillance and detection of objects.

In order for law enforcement to better prepare for the future of quantum computing and quantum technologies, five key recommendations have been identified.

While the development of universal quantum computers is still a future scenario, important steps can and should already be taken today to ensure better preparedness.

Quantum computing and quantum technologies have the potential to revolutionise the work of law enforcement.

At the same time, these technologies are likely to pose criminal threats that will need to be mitigated.

Only by understanding this impact and taking relevant action, can law enforcement agencies fully leverage these opportunities.

This report aims to provide the first step in this endeavour.

To read more: https://www.europol.europa.eu/publication-events/main-reports/second-quantum-revolution-impact-of-quantum-computing-and-quantum-technologies-law-enforcement

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Our reading room:
https://www.solvency-ii-association.com/Reading_Room.htm

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