Dear Member,

The World Economic Forum Annual Meeting in Davos-Klosters remains a creative force for engaging the world’s top leaders in collaborative activities to shape the global, regional and industry agendas at the beginning of each year. Today we will start with the global risk report 2017.

The Global Risks Report 2017

Great risks:

1. Unemployment or underemployment.

2. Energy price shock.

3. Fiscal crises.

4. Failure of national governance.

5. Profound social instability.

The report

Part 1: Global Risks 2017

– Economy: Growth and Reform

– Society: Rebuilding Communities
– Technology: Managing Disruption
– Geopolitics: Strengthening Cooperation
– Environment: Accelerating Action

**Part 2: Social and Political Challenges**

2.1 Western Democracy in Crisis?

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**Part 3: Emerging Technologies**

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**Conclusion**

**Appendices**

Appendix A: Description of Global Risks, Trends and Emerging Technologies 2017

Appendix B: Global Risks Perception Survey 2016 and Methodology


**Audio - Oral Arguments**
The transcripts of oral arguments are posted on this Web site on the same day an argument is heard by the Court.

Same-day transcripts are considered official but subject to final review.

The audio recordings of all oral arguments heard by the Supreme Court of the United States are available to the public at the end of each argument week.

You may visit:
https://www.supremecourt.gov

https://www.supremecourt.gov/oral_arguments/argument_audio.aspx

Transforming the nation’s electricity system (494 pages)
January 2017

In June 2013, through the President’s “Climate Action Plan” and in response to a 2011 recommendation by the President’s Council of Advisors on Science and Technology, President Obama initiated a quadrennial cycle of energy reviews to provide a multi-year roadmap for U.S. energy policy.

In a Presidential Memorandum released on January 9, 2014, President Obama directed his Administration to conduct a Quadrennial Energy Review (QER), and announced the formation of a White House Task Force—co-chaired by the Director of the Office of Science and Technology Policy and the Special Assistant to the President for Energy and Climate Change from the Domestic Policy Council and comprising 22 Federal agencies with equities in energy—to develop the QER.

The Task Force is directed to deliver a report to the President that does the following:

- Provides an integrated view of, and recommendations for, Federal energy policy in the context of economic, environmental, occupational, security, and health and safety priorities, with attention in the first report given to the challenges facing the Nation’s energy infrastructures

- Reviews the adequacy of existing executive and legislative actions and recommends additional executive and legislative actions as appropriate

- Assesses and recommends priorities for research, development, and demonstration programs to support key energy innovation goals

- Identifies analytical tools and data needed to support further policy development and implementation.

The President further directed the Department of Energy (DOE) to provide analytical support for the QER and to help manage the interagency process through a secretariat at DOE. This is consistent with DOE’s missions and statutory responsibilities.

DOE has undertaken periodic reviews and analyses of the energy sector (including in the “National Energy Strategy” of 1991 and the “Comprehensive Energy Strategy” of 1998) and contributed to the work of the National Energy Policy Development Group led by the Vice President.
in 2001, but the last national energy policy report was published nearly 14 years ago, and the U.S. energy system has changed very significantly over that period.

The Presidential Memorandum on the QER acknowledges that such a review is overdue and recognizes the high value of the White House as the convener of such an effort. It also reinforces the equities that multiple agencies have in Federal energy policy.

As directed by the President, the QER is envisioned as a focused, actionable document designed to provide policymakers, industry, investors, and other stakeholders with unbiased data and analysis on energy challenges, needs, requirements, and barriers that will inform a range of policy options, including legislation.

Each installment of the QER will analyze and make recommendations for a key component of the energy value chain.

On February 4, 2016, the Task Force convened a public meeting to introduce the topic of the second installment of the QER (QER 1.2), An Integrated Study of the U.S. Electricity System.

This installment analyzes trends and issues confronting the Nation’s electricity sector out to 2040, examining the entire electricity supply chain from generation to end use, and within the context of three overarching national goals to:

(1) enhance economic competitiveness;

(2) promote environmental responsibility; and

(3) provide for the Nation’s security.

To read more: https://energy.gov/sites/prod/files/2017/01/f34/Transforming%20the%20Nation%27s%20Electricity%20System-The%20Second%20Installment%20of%20the%20Quadrennial%20Energy%20Review--%20Full%20Report.pdf
International policy trilemmas

Remarks by Mr Philip R Lane, Governor of the Central Bank of Ireland, to the London Irish Business Society, London

"International Policy Trilemmas"

The implications of global and regional integration for policymaking have been much studied in recent decades. Indeed, I spent 2002-2008 as Director of the Institute for International Integration Studies (IIIS), which aimed to provide multi-disciplinary perspectives on the myriad policy challenges associated with cross-border integration.

In relation to economic policy, three so-called trilemmas capture the tensions in determining policy choices in an integrated world economy.

First, the Mundell-Fleming trilemma postulates that only two of the following three choices are simultaneously feasible: an independent monetary policy; a stable exchange rate; and unrestricted international capital mobility.

Among the advanced economies that largely adhere to the principle of unrestricted capital mobility, we see countries with independent monetary policies and floating exchange rates and we see countries opting for a shared monetary policy through the elimination of national currencies in the form of the European monetary union.

For some major emerging economies, restrictions on international capital mobility are imposed in order to target both a stable exchange rate and some independence in domestic monetary policy.

Second, as proposed by Dirk Schoenmaker, the financial trilemma has it that only two of the following three options are possible: financial stability; independent national financial policies; and cross-border financial integration.

A restrictive approach to cross-border financial trade can enable a country to combine the maintenance of financial stability with purely domestic financial sector policies, while liberalisation in financial services trade typically requires considerable cross-border policy collaboration if financial stability is to be achieved, especially during periods of financial turmoil.
Third, as developed by Dani Rodrik, the political economy trilemma lays out the restrictive choices between: deep economic integration; democratic politics; and national policy autonomy.

At a strategic level, the institutional development of the European Union has been directed at providing sufficient democratic foundations to underpin enhanced integration across various policy dimensions, through Treaty reforms, inter-governmental mechanisms such as the European Council and an enhanced role for the directly-elected European Parliament.

However, the Brexit decision now compels Europe to also develop mechanisms to foster collaboration between two entities (the EU and the UK) that will no longer be bound together by a common multi-layered institutional framework.

While the trilemma framework is perhaps too stark, it is analytically helpful to recognise the genuine tensions across inter-linked policy dimensions. Let me focus in on the monetary policy and financial trilemmas.

In relation to monetary policy, Brexit does not alter the status quo, which no commitment on either side to stabilise the value of Sterling against the euro and the Bank of England and the European Central Bank each pursuing an independent monetary policy.

In relation to financial stability policies, much has already been written as to the prospects for post-Brexit financial services trade between the UK and the EU.

In relation to the clearing of euro-denominated trades in the UK, President Draghi has recently pointed out that "it will be important to find solutions that at least preserve, or ideally enhance, the current level of supervision and oversight."

"This is important both in relation to the ECB's role as a supervisor of clearing member banks and as the central bank of issue for the euro.

More broadly, the maintenance of financial stability necessarily requires considerable bilateral and multilateral collaboration across major central banks.
During the global financial crisis, this included a network of currency swap lines to facilitate access to foreign-currency liquidity, while fora such as the Bank for International Settlements and the Financial Stability Board enable the sharing of analysis and information across jurisdictions.

Similarly, there is a significant degree of coordination in banking regulation through the Basel Committee.

Still, there are inevitably differences of degree in terms of the scale of coordination within the EU relative to that achievable through global institutional frameworks.

Let us see if some intermediate-level arrangements between the UK and the EU will be delivered through the upcoming EU-UK negotiations.
Welcome address "Into the future: Europe's digital integrated market"

Opening remarks by Mr Mario Draghi, President of the European Central Bank, at the Joint ECB and European Commission Conference "Into the future: Europe's digital integrated market", Frankfurt am Main

It is a pleasure to welcome you here today to this joint ECB and European Commission conference on Europe's digital integrated market of tomorrow.

The conference title invites us to look to the future: to a European financial market which is both integrated and digital. It is indeed fitting that these two elements are considered together.

In a world of increasing digitalisation, our overarching aim of promoting financial integration at the European level is necessarily set against a backdrop of ever more sophisticated technology and innovation.

Capital markets union and post-trade integration

First, let me say a few words on financial integration, which is a focal point for two of our panels today.

Promoting European financial integration is - besides the primary objective of price stability - a key objective of the Eurosystem.

It is essential for a well-functioning single currency. Indeed, you can see financial integration and the single currency as two sides of the same coin: one basic motivation for the single currency was to maximise the benefits of the single market for capital.

Conversely, it was understood that integrated financial markets would be necessary for an effective single currency.

And financial integration is not something we can take for granted. As we saw in the financial crisis, incomplete financial integration creates vulnerabilities and is liable to fragment.

It is the quality of financial integration which is key. With the banking union, we are laying the foundations for a more complete financial integration in the future.
But to be fully comprehensive, a single financial market must also extend to capital market integration.

With this in mind, I am pleased that Mr Olivier Guersent, who has kindly agreed to replace Mr Valdis Dombrovskis, Vice-President of the European Commission, is here today to update us on the status of the Commission’s work on the capital market union and outline the issues at stake.

The ECB welcomes the capital markets union project. It has the potential to complement the banking union, strengthen Economic and Monetary Union and deepen the single market: to provide, together with the banking union, the preconditions for a more sustainable financial integration in the future.

The Eurosystem has laid some of the key fundamentals for a capital markets union by providing the market infrastructure through which capital can move freely across Europe.

Notably, the launch of TARGET2-Securities or T2S in 2015 brought technical and operational harmonisation to the post-trade market.

And T2S also provided the concrete incentive needed to drive the harmonisation process forward more generally.

Markets have aligned their rules and practices to get the most out of T2S, and, over the past years, we have seen how they have harmonised out of choice rather than legal obligation.

This market initiative was supported by the legislative action needed to give the market the space it required to achieve its full potential.

Central Securities Depositories Regulation streamlined the rules and provided the legal framework for T2S's technical operations.

But the work is by no means complete; more remains to be done to attain a full capital markets union.

This will be the topic addressed by today’s first panel, which brings together expertise from both regulators and industry.

It will take stock of the work done on capital markets union and post-trade integration so far and assess where we go from here.
Digitalisation, innovation and integration

Now, let us turn to the other adjective in our conference title: Europe's digital integrated market. The financial integration process in Europe is subject to many challenges - economic, political and technical. One additional - and important - challenge is digitalisation.

This is part of a fundamental change that affects not only the financial industry but society at large: the internet, smart phones and tablets have changed the way we communicate, the way we do business, the way we access and store information - in short, the way we live.

Some claim that we are at the dawn of a new technological age, so-called "industry 4.0" or even the fourth industrial revolution.

Others dispute this, or take exception to the nomenclature. But, however you choose to label it, it cannot be denied that - as digitalisation gathers pace - it continues to insinuate itself into all aspects of our daily life and work. And the journey has by no means reached its end.

Digitalisation can make business processes faster, cheaper and generally more efficient. But it also entails risks that need to be addressed.

Several of our sessions today explore the risks and opportunities of digitalisation from a variety of angles, and the potential effects for financial markets.

Our second speaker, Jeremy Rifkin, will give us insights into what could be in store for us in the years to come as technology continues to have a profound effect on various spheres of life and business, and what could be the impact on financial markets.

Then, my fellow member of the ECB's Executive Board, Yves Mersch, will explore the topic with a particular focus on financial market infrastructure.

The Eurosystem is always on the lookout for ways to improve the efficiency and lower the costs of its market infrastructure. It considers how best to respond to and take advantage of technical innovation and meet new user needs, while staying ahead of evolving risks.

In this vein, we have initiated strategic reflections on the future of the Eurosystem market infrastructure.
We must also be mindful about developments in new technologies and how these might impact the banking business of tomorrow. Indeed, when we talk about financial integration and market infrastructures, we cannot neglect to consider the potentially far-reaching implications which new technologies could have for our financial ecosystem going forward.

For the ECB it is essential that new technologies are explored, analysed and tested to ensure that tomorrow's market infrastructure is not only efficient and innovative but also remains safe and resilient.

This is therefore high on the ECB's strategic agenda. Our second panel today will explore how we can drive integration further and unleash the full potential of an integrated European market.

**Cyber resilience and challenges for regulators**

All progress comes with risks as well as opportunities. And one highly topical risk linked to digitalisation is cybercrime, which is on the rise.

Increases in users and data on digital platforms, in cloud computing and across networks, have multiplied the number of potential routes for criminal attacks.

Agents of cybercrime - be they criminals, "hacktivists" or terrorists - are always on the look-out for ways to increase their level of sophistication and explore opportunities for attacks.

As financial market infrastructures are highly interconnected, the potential effects of such an attack should not be underestimated.

In the light of this, the Eurosystem's aim is to improve the cyber resilience of the Eurosystem as a whole by enhancing the cyber resilience of financial market infrastructures, fostering sector resilience and promoting collaboration in the form of joint initiatives.

Against this backdrop, we are pleased to have here with us today Marco Gercke, Director of the Cybercrime Research Institute, who will share with us his thoughts and expertise on the topic of cybercrime.

The digitalisation of the financial industry poses new challenges to legislators and regulators. Changes brought about by digitalisation, such as the emergence of new services and new market players, may call for
regulatory guidance and response - to ensure both safety and a level playing-field.

With this in mind, our last panel today, moderated by my fellow Executive Board member, Benoît Cœuré, will look at the challenges regulators face in promoting an environment which, on the one hand, allows the benefits of innovation to be reaped, while, on the other, prevents the emergence of new threats.

Conclusion

Thus, to conclude: we have a full and multifaceted agenda today on a topic which, in many ways, lies at the heart of the European project: how to achieve our aim of promoting financial integration in these fast-changing, uncertain and digital times. Once again, I warmly welcome you all, and kindly invite Mr Guersent to take the floor.
Statement at the workshop on "Digital finance - regulatory challenges"

Statement by Dr Andreas Dombret, Member of the Executive Board of the Deutsche Bundesbank, at the G20 conference "Digitising finance, financial inclusion and financial literacy", Wiesbaden, 26 January 2017.

Mr von Weizsäcker,

Ladies and gentlemen,

For a first approach when talking about regulatory challenges in the age if digitalisation in finance, I would like to consider three aspects of financial technology and regulation:

- First, I perceive no general need for separate regulation; to me it seems even detrimental to treat comparable businesses with equal risks in a different way,

- second, regulators have to stand ready to propose solutions for emerging risks. We should initially concentrate on the basics, such as setting the right incentives, but - beyond that - should refrain from regulating "theoretical risks". We should closely monitor Fintech evolution to be able to act swiftly, once risks become relevant in practice,

- third, international exchange about experience with Fintechs is very fertile to set the right course for future regulation from the outset.

The way we perceive financial technology has transformed over the last years.

When the buzzword "Fintech" emerged a few years ago, everybody was excited: Is there a better way ahead for doing finance - maybe even without banks?

I also remember regulators in a state of anxiety: Is traditional financial regulation unsuitable for high-tech financial innovations?

Today and up to now, we have a far more relaxed view about business disruption and regulatory challenges.
In Germany, Fintechs have not forced us to overhaul existing financial regulation or to consider a new framework. The reason for this lies in the setup of German financial regulation: The rules apply to specific business models and their associated risks - technology is, by and large, treated neutrally.

This becomes apparent in our financial services landscape. Some digital innovators that actually accept deposits or lend money need to be licensed as credit institutions.

For some other business models, the rules for financial services institutions apply. Other innovative businesses remain unregulated, but this is for a good reason: they are non-financial in character and only provide auxiliary services complementary to financial services.

By treating financial innovations equally under the regulatory framework, German regulators follow the maxim of "same business, same risk, same rules". But the important strategic question is: does this principle offer enough orientation for the future - given that no one knows how financial innovations and emerging risks may develop in the future?

At the Bundesbank, we have identified some potentially risky Fintech activities that may warrant different regulation at a later stage. For example, various business models have not yet been tested in a downturn.

And we cannot predict which of these start-ups is going to evolve into a major player that may end up even becoming too big to fail or too interconnected to fail some time.

But rules that target a mere theoretical risk might result in overregulation.

On the other hand: If we wait too long for financial innovations to settle, risks could increase and adjustments to the existing regime will be more difficult, as vested interests become increasingly powerful.

To strike the right balance, a general approach could be to initially concentrate on two aspects: One, setting the right incentives through regulation and two, monitoring Fintech evolution closely.

Uncertainty about regulation is surely a common ground for all of us. Exchanging knowledge and experiences should be to our mutual benefit.

Some may raise the different circumstances in our countries as an obstacle.
It is true that digitisation has not spread with the same speed across the globe. Also, regulations differ.

My response is that we need this exchange precisely because of our divergent experiences.

*Given that digital innovations may be "black boxes", learning from each other might help to contain threats from the outset.* That way, regulation will not lag one step behind financial innovation. Best practices could be a valuable output.
The future of the European insurance industry in a digital era: Turning challenges into opportunities

Bergisch Gladbach, Sueddeutsche Zeitung Insurance Day 2017, Gabriel Bernardino, Chairman, European Insurance and Occupational Pensions Authority (EIOPA)

Good afternoon Ladies and Gentlemen,

I am very pleased to be here today to address this distinguished audience with a very topical subject, the future of the European insurance industry in a digital era.

Understanding and adequately confronting the challenges the insurance industry is already facing and will continue to face in the digital future is crucial.

In an environment where the changes are fast-paced we all, the regulators and supervisors as well as the industry cannot just sit back and wait and see what future will bring. We all have to act timely and appropriately and not simply react when being forced.

Our society is confronted with successive technological innovations and the continued increase in the use of big data. This digital revolution is transforming completely the way we interact and do business.

Today, I want to set out the implications of this digital revolution on the insurance sector as well as to highlight our strategic direction of building a common European supervisory culture.

I will conclude by elaborating on the expectations from the supervisory side.

To my first point: Implications of Digitalisation for the Insurance Sector

The insurance world is not an exception and is already confronted with the reality of digitalisation and Big Data. Some will say that we have always been facing changes and that this is just another step.
That’s true, but the change coming from and triggered by the digital era is different: in many aspects it is not incremental; it is disruptive.

The entire insurance value chain will be impacted, from insurers to intermediaries, distributors and service providers.

We will see business models being threatened and new entrants implementing business models that will dramatically reduce the traditional frictional costs.

The use of Big Data and telematics, comparison websites and automated advice tools will impact the interface with consumers.

The increasing amount of personal data available and the power of data analytics will inevitably change insurance underwriting models.

There are definitely some potential risks associated with Big Data such as access issues for consumers being classified as undesirable due to abilities to undertake more granular analyses.

Furthermore, cyber risks will increase directly in line with the growing amounts of data stored.

But as we all know, changes bring challenges and risks, but equally opportunities. The Big Data and the digitalisation will also bring a number of benefits to both insurers and consumers.

Better analytics mean companies can profile customers in order to personalise products and services, enhance their own internal processes and improve their fraud detection capabilities.

This change has the potential to produce better outcomes for customers and better management of risks or fraud situations.

In December last year EIOPA has launched together with the two other European Supervisory Authorities a Public Consultation on Big Data to address this phenomenon and invited all stakeholders to share their views.

I herewith invite you all to make use of this consultation and provide your feedback. Existing EU legislation on data protection, competition and consumer protection, which share the common goals of promoting economic growth, innovation and the welfare of individual consumers, are
relevant for insurers but are not explicitly addressing Big Data therefore further steps in this area are needed.

This year EIOPA will also organise a series of roundtables dedicated to “Insurtech”. Our objective is to learn from different stakeholders about the evolutions in this field, the benefits and risks for consumers and the potential obstacles to good innovation practices.

In particular, EIOPA wants to evaluate the impact of digital technologies in the insurance value chain, to gain a further insight into Insurtech startups, Big Data, consumer analytics and cyber risk.

It is of utmost importance to EIOPA that consumers’ expectations and behaviour in a digital economy will be adequately captured and their rights fully respected.

Ultimately this will contribute to the development of a regulatory framework that promotes the highest standards of consumer protection while not hindering innovation.

EIOPA places consumer protection, both through prudential and conduct of business regulation, at the centre of its strategy. In this context, the implementation of the Insurance Distribution Directive (IDD) is a significant step forward.

By the end of this month EIOPA will submit its draft technical advice to the European Commission on possible delegated acts on issues like Product Oversight and Governance, Conflicts of Interest, Inducements and Assessment of suitability and appropriateness.

Our aim is to ensure that the interests of the customers are taken into consideration throughout the life cycle of a product, that distribution activities are carried out in accordance with the best interests of customers and that customers buy insurance products which are suitable and appropriate for them.

Detrimental impact occurs when an inducement or structure of an inducement scheme provides an incentive to carry out the insurance distribution activities in a way which is not in accordance with the best interests of the customer.
It is then fundamental to identify criteria to assess if and when inducements are considered to have a high risk of leading to a detrimental impact on the quality of the relevant service to the customer.

Another significant project within the overall work of EIOPA on the IDD is the Insurance Product Information Document (IPID).

Its objective is to ensure that the customer has the relevant information about a non life insurance product to allow him to easily compare between different product offers and to make an informed decision about whether or not to purchase the product.

We developed a template for the Insurance Product Information Document (IPID) which is in its final phase.

Going forward, with the implementation of the IDD, a stronger and more effective supervision of intermediation activities is needed throughout the EU. In Germany, it is my opinion that Bafin should be granted further supervisory powers on the supervision of the intermediation activities.

**Turning to my second point: Creating a common European supervisory culture while preserving regulatory certainty**

In the coming three years one of our key priorities is to further enhance supervisory convergence with the aim to move towards a common European supervisory culture.

**A risk based culture that:**

- Aims to ensure strong but fair supervision
- Is based on a forward-looking approach to risks
- It takes into account that it is always better to prevent than repair
- Prioritises the dialogue with market participants in order to better understand their business models, strategies and underlying risks
- Promotes early enough awareness and supervisory action in order to protect policyholders and mitigate possible disruptions in the market.

Supervisory convergence will ensure that European Union regulation is applied in all Member States. It will provide a level playing field and
prevent regulatory arbitrage in the internal market. Policyholders and beneficiaries across the European Union should have a similar level of consumer protection.

Going forward, regulatory certainty is an important value that we all should preserve.

The review of Solvency II should follow the structured process envisaged in the legislative texts: By 2018, the review of the Solvency Capital Requirement (SCR) and by 2021, the overall review of the regime, including the treatment of long-term guarantees.

In December EIOPA issued a discussion paper on the review of the Solvency Capital Requirement (SCR) marking the first phase of the Solvency II review process.

EIOPA is committed to an evidence-based policymaking. In this context during this year through a series of roundtables we will engage with all relevant stakeholders.

Changes must be carefully justified and clearly necessary. We are particularly interested in concrete proposals to achieve the objective of more simplicity and proportionality whilst reflecting risk-sensitivity of the system and avoiding procyclicality.

To my last point: A successful industry in a challenging macroeconomic environment

A successful industry is key in achieving strategic objectives, namely preserving financial stability and enhancing consumer protection.

Even though the current macroeconomic environment continues to pose challenges for insurance companies, it is important to act now.

EIOPA expects that insurance companies confront the reality by:

• Promoting a strong risk culture

• Recognising the benefits of Solvency II public disclosure

• Developing a consumer-centric culture
Promotion of a strong risk culture

A crucial element in Solvency II is the risk management requirements. They have the potential to be a truly game changer, helping to promote a strong risk culture in insurance companies.

We need to see insurers relying on strong risk management capabilities to deal with the challenges posed by the low interest rate environment, the financial markets volatility, the slow economic growth, the digital era.

To implement an effective risk management system is not an instantaneous move. It takes time, commitment, effort and especially a clear tone from the top. Boards of insurance companies have a fundamental role to play.

They need to set, communicate and enforce a risk culture that consistently influences, directs and aligns with the strategy and objectives of the business and thereby supports the embedding of its risk management framework and processes.

The time for “box ticking” is over.

Recognising the benefits of Solvency II public disclosure

EIOPA believes that the disclosure requirements under Solvency II are very important and should lead to the disclosure of meaningful and comparable information.

Ultimately this is an essential tool that follows the principle of transparency by ensuring market discipline and supporting the objective of preserving financial stability.

This year the essential information on the solvency and financial condition of companies will be made publicly available for the first time.

For most parts of the European insurance and reinsurance market this is a novelty and a paradigm shift in terms of communication with the outside world, the customers, stakeholders, observers and the public at large.

This new challenge should be turned into the opportunity. Better transparency can facilitate effective cross-border cooperation, will increase comparability, lead to more competition and will improve understanding of Solvency II by those who shape the public and market opinion about companies – financial analysts, researchers and journalists.
A collective effort is needed to ensure that the Solvency II metrics and their sensitivities are properly understood, in particular because they will be more volatile than in the past.

The reporting requirements will increase the quality of the data available in the companies, which is a fundamental element to upgrade risk management.

Therefore, we encourage insurance companies to embrace this opportunity and to actively engage in consistent, comparable and high quality communication with the stakeholders on the solvency and financial condition.

It is important to be fully transparent on the use and impact of transitionals and the long term guarantee measures.

**Development of a consumer-centric culture**

The governance requirements of Solvency II are a paradigm shift towards a more consumer-centric culture. There is a need to better integrate conduct of business concerns in the institutional governance arrangements in order to ensure that companies reliably place the interest of their customers at the heart of their business.

But it is not only about designing and putting in practice appropriate governance structures and controls. It is now time to ensure that they are effective and that they deliver the desired outcomes.

We do not want a move to a culture of formal compliance; rather we all need to promote a culture based on strong ethical values.

When putting in practice the fundamental sound governance basis of Solvency II, special attention should be devoted to the companies’ processes which need to result in fair products and in building trust in long-term relationships with consumers.

**Conclusion**

The future of insurance industry depends on all of us: The industry itself, the regulators and supervisors. It depends on what we do today and how we do it.

The insurance industry needs to keep pace with societal and technological
developments in order to meet the expectations of consumers and to treat them fairly.

EIOPA remains dedicated to develop principles that provide a sound basis for strong protection for consumers without hindering innovation in a digital environment.

I believe that if both, the insurance market and supervisors remain faithful to the already existing principles of Solvency II we will see positive outcomes for the protection of consumers and for preserving financial stability. It is the right basis and framework for turning the challenges into opportunities.

Thank you for your attention.
The completion of Basel III - the start of something new

Ms Kerstin af Jochnick, First Deputy Governor of the Sveriges Riksbank, Centre for Business and Policy Studies, Stockholm

I would like to thank Tomas Edlund for his help with this speech.

The work of the Basel Committee is important and affects Sweden.

Good morning. Thank you to the Centre for Business and Policy Studies for inviting me here to talk about Basel III and what it may entail for Sweden.

Recently there have been several attempts by different parties to analyse how the Basel Committee's completion of the Basel III Accord may affect the global financial system.

Some people question whether it is really necessary for the regulation of banks' capital requirements to be amended yet again, and wonder how this will affect, for instance, the Swedish banks.

As I have recently, in my capacity as member of the Basel Committee, been involved in discussing various parts of Basel III, I would like to give my own views on the subject today.

I hope this will answer some of the questions now being raised. However, I would like to point out from the start that no final agreement on the finalisation of Basel III has yet been achieved.

Still, the main features of the agreement are relatively clear at this point, and the Basel Committee is now working on the final details.

However, I do not intend to focus on the details today, as they are many, but instead on the fundamental blocks on which Basel III is built.

To read more: https://www.bis.org/review/r170201d.pdf

To download the slides: http://www.bis.org/review/r170201d_slides.pdf
The promise of FinTech - something new under the sun?

Mark Carney, Governor of the Bank of England and Chairman of the Financial Stability Board, at the Deutsche Bundesbank G20 conference on "Digitising finance, financial inclusion and financial literacy", Wiesbaden

FinTech's shining future

It is a pleasure to be at Schloss Biebrich as part of this Bundesbank conference on "Digitising finance, financial inclusion and financial literacy."

Just a few hours ago, I was in the world's leading FinTech centre. One which generated £6.5 billion in revenue, attracted just over £500 million in investment and employed around 61,000 people in 2015.

From start-ups in London's Silicon Roundabout to established players in The Valley, entrepreneurs are applying their creativity and technical ingenuity along the financial services value chain.

To its advocates, this wave of innovation promises a FinTech revolution that will democratise financial services.

Consumers will get more choice, better-targeted services and keener pricing.

Small and medium sized businesses will get access to new credit.

Banks will become more productive, with lower transaction costs, greater capital efficiency and stronger operational resilience.

The financial system itself will become more resilient with greater diversity, redundancy and depth.

To read more: https://www.bis.org/review/r170126b.pdf
Industriial Dialogue on "Distributed ledger technology - potential benefits and risks"

Introductory statement by Mr Carl-Ludwig Thiele, Member of the Executive Board of the Deutsche Bundesbank, at the G20 conference "Digitising finance, financial inclusion and financial literacy", Wiesbaden

Mr von Weizsäcker,

Ladies and gentlemen

Whenever a technical topic attracts as much media attention as blockchain technology has, it must mean it’s something special, especially considering the topic itself is not an easy one.

It's safe to say that there is much anticipation surrounding distributed ledger technology - some feelings of hope, some of fear. And the influence this technology is likely to have extends far beyond the financial sector.

The Deutsche Bundesbank operates large financial market infrastructures and also develops these further in line with technological advances. For this reason, we need to be aware of the potential benefits and risks of this technology early on.

Together with Deutsche Börse, we have developed a preliminary prototype for blockchain-based settlement.

This prototype has the following capabilities:

- Settling payments based on blockchain technology,
- Transferring securities,
- Processing basic delivery-versus-payment transactions, where securities purchases are settled and paid for simultaneously, and
- Processing basic corporate actions, such as coupon payments on bonds and redemptions of maturing securities.

The aim of the project is to learn, step by step:
- How blockchain technology works,
- How secure and reliable blockchain-based transactions are,

- Which factors affect the costs of blockchain-based transactions,

- How efficient and effective blockchain-based processes are, and

- How existing processes may be improved using blockchain technology.

One of the key points here is increasing process efficiency. By using a shared data pool across all entities concerned, it should be possible to standardise and simplify some of the overly complicated transaction monitoring processes we have today.

In addition, a shared data pool in combination with a flexible access rights concept would, for example, also establish the conditions in which the relevant regulatory reporting and internal audit requirements could be met with reduced effort and designed more securely.

We opted for a concept based on a Hyperledger blockchain. The most important considerations for us when designing the Hyperledger-based prototype were:

- Having a closed - or "permissioned blockchain" - network, where only authorised users can transact on our blockchain network.

- Confidentiality and responsibility - we believe that even in the future, financial transactions will continue to be governed by today's standards as far as confidentiality and acceptance of responsibility for effected transactions go. That's why each individual transaction is encrypted, along with the identities of the transacting parties.

Our conceptual study shows that blockchain technology can be adapted to meet the current needs and requirements of the financial system. The prototype works.

Having said that, its further development for mass use is still presenting many challenges.

The conceptual study is far from being market-ready. We are currently only at the preliminary stage with a test application, with which we are able to simulate large-volume delivery-versus-payment securities transactions. At this point, we are unable to say whether this application can be adapted for mass use or whether this is even a viable option in terms of costs.
So, to summarise: our joint project has seen the development of an elementary, but functional, blockchain-based application, which caters to the basic requirements of the financial sector.

With this as our starting point, we aim to develop a technically more sophisticated prototype, capable of providing information on technical performance and thus allowing comparison with our present settlement infrastructure.
A Comprehensive Approach to Evolving Cyber Threats

Julian King, Commissioner for Security Union
Keynote address at a cybersecurity workshop co-hosted by the European Commission and the Cyber Studies Programme of the University of Oxford

The threats we face as societies are in flux. Terrorism, radicalisation, and organised crime remain firmly in the top five. But as everybody in this room knows there is a virtual threat with real consequences that is growing in strength, in impact and in prevalence. Cyber-attacks, cyber security and cyber resilience are issues that have morphed from being in the background to being front and centre to national and global security. And because this is a digital rather than an analogue threat, the pace of evolution poses a real challenge to those of us tasked with countering it.

But you all know that already...which is why I'm looking forward to tonight's discussion.

This does not mean other threats have disappeared – organised crime has not gone away, and there are worrying signs from radical groups on the extreme left and extreme right. Threats can change very quickly and we must remain vigilant. But right now, the most persistent and present threats are not only those posed by jihadi inspired terrorism but also cyber threats, in all their forms.

From where I sit in Brussels, it seems that although the threats posed by cyber are not new, what has changed is the scale of them and their increasing diversity. The actors are not only criminals – with ransomware, malware and phishing – driven by a profit motive; but also state and non-state actors who see cyber as a valuable – and deniable weapon. As Eric Schmidt and Jarad Cohen noted recently “in future all wars will begin as cyberwars”.

In terms of the criminal threat - reports last week highlighted that cyber offences accounted for about half of all criminal offences in the UK. Online fraud is now the most common crime in the UK with almost one in ten people falling victim. Half of all companies in Europe have experienced at least one cybersecurity incident. Globally, the cost to society of cyberattacks and cyber hacking in 2015 was estimated by Grant Thornton to be around $315 billion. The growth in this area has been exponential.
The increasing interconnection of our systems and networks means these numbers will only grow in years to come.

The *World Economic Forum's Global Risks Report 2017* lists "massive incident of data fraud or theft" as one of the five major global risks in terms of likelihood.

In terms of the threat from state and non-state actors, we have moved from a situation a decade ago where cyber-attacks were used as a form of punishment – *against Estonia* in 2007 for moving a statue – through cyber as a non-military means of achieving a military objective – the 2010 *Stuxnet* attack on the Iranian nuclear enrichment programme - to one where they are used in Death Star style demonstrations of power – the 2016 *closing down of Ukraine’s power grid*.

Added to this – and worryingly for an EU with several national elections this year - is the new found capacity for cyber to be used to manipulate democratic processes. It is not hard to see how a false email inserted in a hack of thousands laundered through Wikileaks could have a powerful influence on public opinion.

An indicator of the seriousness with which this threat is being treated comes from the fact that it has been highlighted by the heads of the Secret Services in countries like the UK and Germany. Our first response must be to talk about these attacks – because those who commit them want to stay in the shadows and we must shine a light on them and their activities. That's our first line of defence.

So the risks posed from cyber seem to be ever more present, and ever more dangerous. And we’re all concerned as some attacks target you and me as the average consumer on their computer at home or at work; others target companies – big and small, government and all other institutions. In the Commission, we saw an increase of 20% in the attacks on our servers in 2016 compared to 2015.

Although the source and nature of these threats is extremely varied, our response to them will have much in common. Principally, we need to make ourselves less vulnerable – strengthening our protection and resilience to attacks. We also need to be able to manage and mitigate attacks when they do happen, and prosecute those who carry them out.

It's these issues I want to develop with you this evening.
Cyber-attacks do not take into account geographical borders and can be achieved at a low cost with devastating effects including posing a risk to our internal security. I’m reliably informed that I can rent a Botnet for the afternoon on the Dark Web for a modest sum which I could use to launch a Distributed Denial of Service attack against anyone I felt like... So let's hope the evening goes well...

As the Internet of Things grows we are inadvertently lowering the threshold both in terms of cost and availability for these attacks. My smart fridge and TV have factory set security codes – insecurity by design. This needs to change.

Our policy response has four strands:

1/strengthening our cyber resilience

2/stepping up the fight against cybercrime

3/increasing support for innovation in the field of cybersecurity

4/strengthening international cooperation

I. Strengthening our cyber resilience

The NIS Directive (NIS) on the security of networks and critical information was adopted last July. It aims to ensure that:

— All EU Member States have a national Cyber Security Strategy, a national authority responsible for network and information security, and Computer Security Incident Response Teams (CSIRTs) in place by the time the Directive enters fully into effect - i.e. by May 2018.

— cooperation between CSIRTs and EU Member States at EU-level is strengthened;

—critical networks are appropriately protected. This means that Operators of Essential Services need to be designated (in the energy, water, health, transport, banking, financial markets, and digital infrastructure sectors). These Operators will be obliged to report "incidents of significance" having an impact on the continuity of essential services.

In addition, in 2012, an emergency response team (CERT-EU) was put in place to respond to cyber threats and attacks within the European
institutions and agencies. CERT-EU also works in cooperation with the Member States.

Implementation of this directive by all Member States is the most important step we can take to ensure greater protection of our key infrastructure, and a greater shared understanding and cooperation between all the main actors. But it’s of course not enough.

We also need law enforcement and judicial authorities to have the necessary means to find and punish cyber-criminals.

II. Step up the fight against cybercrime

The European Cybercrime Centre at Europol (EC3) has a key role to play in that respect.

In recent months, it has worked with the Dutch Police and the private sector to launch an initiative against ransomware. This initiative helps alert victims and provides them with the necessary tools to decrypt their software and recuperate information. More than 2500 machines have been decrypted – free of charge – thanks to this initiative.

Let me give you another recent example. On 30 November 2016, law enforcement authorities took down a vast international criminal infrastructure known as Avalanche.

The operation involved law enforcement and judicial authorities of 30 countries – and coordinated by Europol and Eurojust.

As a result, five individuals were arrested, 37 premises were searched, and 39 servers were seized. Victims of malware were identified in over 180 countries. This example underlines the importance of European and international cooperation on cybercrime.

Eurojust has also recently stepped up its work with the introduction of a European network to fight cybercrime, and bring together judicial authorities.

Setting up an appropriate legal framework at an EU level is also necessary. Access to evidence is vital in the fight against cybercrime. The European Commission has launched a consultation to discuss solutions to facilitate this access, including by working more closely with online service
providers. The Commission is also working to simplify and speed up requests for mutual legal assistance.

The issue of encryption is a sensitive but an important one in this context. Encryption is essential in terms of data protection and should not be called into question. However, in the context of criminal investigations, in particular relating to terrorist cases, judicial authorities also legitimately need access to data – both potentially to prevent further attacks and in prosecution cases. We need to think about solutions to that effect, of course fully respecting the protection of fundamental rights and individual freedoms.

And in all this, we need to continue to work together with the private sector, as a key partner in the fight against cybercrime and cyber security threats.

III. Increasing support for innovation in the field of cybersecurity

If we want to be better protected against cyber threats, we need to build in "security by design" and we must support and assist companies operating and innovating in the field of cybersecurity.

There is lots of great research going on – and many of you around this table are involved in it and I hope to hear more about the projects you’re involved in. But we need to make sure the findings of research - when appropriate - are properly disseminated and there is market take-up.

The EU helps with funding – in numerous ways. Last summer, we launched a new public-private partnership that is expected to trigger EUR 1.8 billion of investment by 2020, with the EU providing EUR 450 million through Horizon 2020.

And cybersecurity market players, represented by the European Cyber Security Organisation are expected to invest three times more. This partnership will also include members from national, regional, and local public administrations, research centres, and academia; with the aim fostering cooperation at early stages of the research and innovation process and building cybersecurity solutions for various sectors, such as energy, health, transport, and finance.

In addition, the Commission is working on different measures to tackle the fragmentation of the EU cybersecurity market. Currently an ICT company might need to go through different certification processes to sell its
products and services in several Member States. With ENISA, the European Agency for Network and Information Security, the Commission is looking into the possibility of setting up an EU certification framework for ICT security products.

IV. Reinforcing international cooperation

Before concluding, I would just like to touch on the importance of the international dimension in the field of cyber security. The European Commission supports cyber capacity building in third countries as well as international cooperation in the field of cyber-security. 45 million euros have already been invested by the EU in this field.

Moreover, the European Union is a founding member of the Global Forum on the expertise of cybercrime (GFCE), a multi-country platform enabling countries, international organisations and participating companies (currently 55 participants, including 11 EU Member States and Europol) to exchange good practices and expertise in order to facilitate the establishment of partnerships to build capacity.

The interconnected world in which we live today offers many opportunities for citizens, governments and public and private actors. However, it also offers unprecedented opportunities to criminals, terrorists, and hostile states. That is why it is essential to work together to build resilience and to drive technological innovation, at a European level and in the context of our relations with third countries, in order to strengthen our collective efforts to combat cybercrime and cyber security threats.

Finally, we need to plan for the future – because cyber threats are not going to go away. The EU’s cybersecurity strategy dates back to 2013. It’s ancient history in a world that is moving so fast. We must be ready for whatever the future holds.
Non-Performing Loans (NPLs)
Setting the standard: NPL workout in the euro area

Sharon Donnery, Deputy Governor of the Central Bank of Ireland, at an event entitled "Tackling Europe's non-performing loans crisis: restructuring debt, reviving growth", organised by Bruegel, Brussels

I would like to thank Donata Faccia and Mícheál O'Keeffe for their contribution to my remarks.

1. Introduction

Good morning, It is a pleasure to be here today at Bruegel to discuss the resolution of Non-Performing Loans (NPLs) in the euro area.

Different factors have contributed to the formation of non-performing loans across individual Member States. In Ireland and Spain, for example, NPLs were mainly driven by idiosyncratic shocks, namely the collapse of real-estate bubbles.

Conversely, the roots of Italian NPLs can be found in the prolonged deterioration of the economy more generally and in the persistent reduction of its competitiveness.

Regardless, the deliberate and determined reduction in non-performing loans is essential for the viability of the European banking sector. It therefore constitutes a necessary condition for the recovery of the euro area economy.

The diverse causes underlying NPL formation, the multiple channels by which they can affect macroeconomic performance, as well as the high degree of heterogeneity across the European banking sector, call for a flexible approach in addressing Europe's NPL problem. However, saying that an appropriate response should take into account the different context in which euro area banks operate, does not mean that we cannot adopt a consistent approach to the supervision of non-performing loans. This includes applying a common framework for NPL resolution across the Banking Union.

The most effective response should turn best practices into common standards for NPL management across the banking sector, while at the
same time recognising the need for a granular approach. In this context, the ECB Guidance 'sets the standard' for NPL management going forward.

Today, in my brief introductory remarks, I will focus on how the Guidance provides a common standard for NPL management across the euro area, yet allows for the differing position of individual banks and takes into account the varying contexts in which they operate. I will highlight the necessity for experience and ownership at board level, the capacity gaps that exist in terms of implementation, and explain how we expect these to be addressed.

Finally, I will briefly discuss a number of national practices that still pose a considerable challenge to the timely reduction in non-performing loans in some Member States. In this context, concerted action from all relevant stakeholders is needed to tackle this important issue.

2. The framework going forward

Following the Comprehensive Assessment in 2014, ECB Banking Supervision continued to focus on issues relating to asset quality through its ongoing supervisory engagement. Through the work of the SSM it became evident that different banks had been subjected to different intensities in the supervision of non-performing loans and that different Member States had implemented varying guidance in how banks should deal with workout and resolution.

Therefore, the High Level Group on Non-Performing Loans - which I have the honour to chair - was mandated to develop a consistent supervisory approach to the treatment of NPLs. The Guidance - which represents ECB Banking Supervision's expectations going forward - is an important step towards NPL reduction across the euro area.

The publication of the Guidance on NPLs was accompanied by an extensive consultation process which ended on 15 November 2016. We received nearly 700 comments on all chapters of the Guidance, all of which will be published. Since then, we have been reviewing both the comments submitted in written form and those provided during the public hearing, and we are now aiming to publish the final Guidance in Spring 2017.

Through the work of the High Level Group we identified a number of best practices relating to NPL management. These have been incorporated into the Guidance as the standard for NPL management going forward. A
central principle of the Guidance is 'tone from the top'. The resolution of non-performing loans rests firmly with the institutions themselves.

**Management bodies must take full ownership of this problem.** This includes the development, and approval of a strategy and operational plan to deliver the progress required. Furthermore, frequent and regular reporting to the board is necessary to ensure progress versus agreed targets is achieved.

However, in order to develop ambitious, yet realistic strategies to reduce NPLs, boards first need to gain a clear understanding of the full context in which they operate. It is clear, at present, many boards have not yet established this. From the bottom up, banks also need to examine the drivers and scale of non-performing loans. In doing so, they are expected to adopt an extremely granular approach. A careful assessment of the external environment, the resources available to debtors, as well as the internal operational capacities, will contribute to the identification of the most appropriate strategy to reduce non-performing loans.

To ensure effective implementation, we also expect banks to review their governance structures and operational arrangements against the benchmark laid down in the Guidance. Drawing from international best practice, the Guidance prescribes that banks should establish dedicated NPL workout units, separated from the loan granting functions.

The main rationale for this important separation is the elimination of potential conflicts of interest and to ensure the presence of staff with dedicated expertise and experience in NPL management. This separation of duties should encompass not only client relationship activities (e.g. negotiation of forbearance solutions with clients), but also the decision-making process. In this context, dedicated NPL committees should also be established.

Given the existing heterogeneity across the European banking sector, setting generic quantitative targets for NPL reduction in the strategies would have inevitably resulted in unrealistic targets for a number of banks. By contrast, if adapted to suit all situations, targets would have not been very ambitious. Therefore, we explicitly decided not to set a single threshold for NPL reduction.

Rather, taking into account the specificities in which banks operate, targets are required to be set using a portfolio-by-portfolio approach.
The standard - outlined in the Guidance - prescribes that banks must articulate their NPL targets along three dimensions - (i) across time, (ii) by portfolio and, (iii) by implementation option chosen to drive the projected reduction.

Clearly defined quantitative targets in their NPL strategy, approved by the management body, will ensure 'extend and pretend' situations will not persist. The targets will require banks to segment non-performing loans and effectively manage them towards likely resolution outcomes (depending on borrower cooperation and business viability).

Retail NPLs can remain stubbornly high, and commercial debt resolution strategies are likely to be complex and take significantly more time to devise and implement. Therefore, a case-by-case assessment is required to develop and agree bespoke sustainable solutions with distressed borrowers.

Allowing for bank-specific quantitative targets for NPL reduction does not mean that ECB Banking Supervision will not implement consistent supervisory standards.

The Joint Supervisory Teams (JSTs) will treat all banks in the same way when assessing both the degree of implementation and the ambitiousness of banks' strategies. Furthermore, using peer analysis tools and techniques:

(i) we will analyse all banks strategies in a comparative context,

(ii) we will compare granular sets of indicators, allowing for a single and relative view on progress, and

(iii) we will benchmark by portfolio, by peer group and by Member State, to assess progress.

Our intrusiveness will depend on the scale and severity of the NPL challenges different banks face. With the JSTs, we will also organise regular onsite inspections of banks with high levels of NPLs to gauge progress. However, we will also take a proportionate approach where necessary. For example, banks with a high NPL concentration in certain parts of the business will be asked to put in place portfolio-specific non-performing loan reduction strategies, despite having an overall NPL level not considerably above the EU average.
Should supervisors find that the NPL strategies are either not appropriately implemented nor sufficiently ambitious, additional supervisory measures can be triggered on a case-by-case basis. Although the Guidance at present is non-binding in nature, any deviations from it will need to be explained. Supervisory expectations can be turned into binding requirements by implementing them as part of the Supervisory Review and Evaluation Process.

We expect the Guidance to become embedded in the ECB supervisory manual, thereby becoming business as usual supervision. We also expect markets to exert pressure on banks to take action, resulting from greater disclosure.

3. Capacity gaps

Looking at the operational capacity of banks, it is clear that many deficiencies exist. Turning first to the important issue of 'tone from the top', in some cases, the skills to deal with this issue at board level are significantly lacking. Board members will either need to upskill, or people with the appropriate skill-set will need to be appointed.

This is essential to ensure NPL strategies get sufficient attention and drive, and become fully embedded in the overarching objectives of banks.

Similarly, at an operational level, some institutions simply do not have enough people with effective arrears management experience to deal with this problem. Centralised specialist resources are needed. Therefore, realistically, some banks will have to bring in outside expertise. We saw this previously in some programme countries.

In terms of management and decision-making, full consideration of all available long-term options is necessary. However, this requires segmentation aligned to NPL workout. It also demands accessible documentation and considerable financial analysis, as well as frequent site visits to verify business and collateral. Complete and up-to-date data to assess performance and track KPIs is also essential to monitor workout progress and is critical to the effective implementation of the NPL strategies more generally.

However, it is clear considerable gaps in IT infrastructures also exist in some banks. In many cases data is simply not reliable or granular enough. For example, a key issue reported between the bid/ask price is data.
tapes need to include all the necessary information relating to the collateral and legal process to allow for cross-section and segmentation analysis.

The standard we have set in the Guidance, prescribes that all non-performing loan related data are securely stored in central IT systems. Where systems are not 'fit for purpose', banks will have to quickly put in place remediation plans to address these capacity gaps. As you know IT infrastructure plans can take some time to implement and require investment. Those plans will therefore also be subject to scrutiny by our Joint Supervisory Teams.

4. Coordinated response

Tackling Europe's non-performing loan problem, however goes beyond the supervisory domain. Some reductions in non-performing loans have been noted across the euro area and a number of countries have taken proactive and coordinated prudential, judicial and other measures to tackle the issue. However, as shown by the Stocktake report, in some Member States a number of national practices and legal and judicial aspects still pose a considerable challenge to timely NPL reduction.

The inefficiencies of judicial systems are considered by the majority of the countries surveyed, as an obstacle to the speedy resolution of non-performing loans, due to capacity constraints of the courts.

Other aspects that need to be addressed include

(i) the lack of a modern legal framework for enabling timely out-of-court settlement,
(ii) challenges related to both the corporate and the household insolvency system, and
(iii) factors - such as the taxation regime or the accounting framework - that can also discourage NPL resolution.

The focus of the Guidance is on workout. And working out NPLs can create a pipeline for future sales, where possible. However, the underdevelopment of secondary debt markets also impedes non-performing loan resolution in most of the countries surveyed.

Specific obstacles in the legal and regulatory framework appear to be the cause of such a market stagnation. This despite the fact that the majority of jurisdictions surveyed appear to have a framework favourable to transfer non-performing loans to third parties.
Joint action from all relevant stakeholders - including Member States, the Commission and EU fora - is therefore critical. In this context, we welcome initiatives - such as this - to connect the market, policy, and supervisory discussions on this topic and promote a dialogue between respective professional communities to define a shared agenda for NPL workout and resolution.

5. Conclusion

To conclude, we were given a clear mandate to deliver a consistent supervisory approach to the treatment of non-performing loans across the euro area. The Guidance delivers on this objective, by setting the standard for NPL management going forward. It ensures supervisors have the necessary tools available to them, and banks have the necessary capacity to tackle NPL problems.

However, publishing the Guidance is only the first step. Implementation is our next challenge and this will not happen overnight. We also need strong and clear support from Member States to tackle legal and related issues.

Boards will play a crucial role in developing, owning, and implementing bank specific strategies, and we expect pro-active engagement going forward.

As Madame Nouy has repeatedly emphasised, this will be reinforced by tough but fair supervision.

Thank you for your attention, I look forward to the discussion.
ENISA Threat Landscape 2016 report: cyber-threats becoming top priority

ENISA’s Threat Landscape 2016 (ETL 2016) is the fifth consecutive yearly report summarizing the top cyber threats encountered in 2016. Published on February 08, 2017

The ENISA Threat Landscape 2016 - the summary of the most prevalent cyber-threats – is sobering: everybody is exposed to cyber-threats, with the main motive being monetization.

*The year 2016 is thus characterized by “the efficiency of cyber-crime monetization”.*

Undoubtedly, optimization of cyber-crime turnover was THE trend observed in 2016. And, as with many of the negative aspects in cyber-space, this trend is here to stay.

The development and optimization of badware towards profit will remain the main parameter for attack methods, tools and tactics. Attacks including multiple channels and various layers seem to be the “state-of-the-art” for advanced threat agents.

While robust, efficiently managed flexible tools continue to be widely available, even to low capability threat agents “as-a-service”.

**Fortunately, the maturity of defenders increases too.** In 2016, cyber-threat prevention has:

- Gained routine in disruptions of malicious activities through operations coordinated by law enforcement and including vendors and state actors.

- Achieved some advantages in attribution through exploitation of weaknesses of anonymization infrastructures, tools and virtual currencies.
- **Gained valuable experience** by major attacks in the area of DDoS. This will help towards future mitigation of such attacks that in the past have been considered as disastrous.

- **Cyber-security has gained in importance in the professional education and training market.** It is remarkably strengthened in universities and training organisations in an attempt to **cover the demand and thus counteract current and future skill shortage.** However, in cyber-space the attackers are one step ahead.

The advances of defenders have been the result of superiority of attackers in:

- **Abusing unsecured components** to mobilize a very large attack potential. This capacity that has been demonstrated by means of DDoS attacks by infected IoT devices.

- **Successfully launching extortion attacks** that have targeted commercial organisations and have achieved very high levels of ransom and high rates of paying victims.

- **Demonstrating very big impact achieved by multi-layered attacks** to affect the outcome of democratic processes at the example of the US elections.

- **Operating large malicious infrastructures** that are managed efficiently and resiliently to withstand takedowns and allow for quick development and multi-tenancy.

Expectedly, all above issues can be followed by means of the assessment performed within the ENISA Threat Landscape (ETL 2016). In the following report, we give an overview of the top cyber-threats assessed in 2016. By concentrating more on the cyber-threats, ETL 2016 is more streamlined towards the details of cyber threats, while it provides information on threat agents and attack vectors.

### Top Threats 2015 vs. 2016

<table>
<thead>
<tr>
<th>Top Threats 2015</th>
<th>Top Threats 2016</th>
<th>Change in ranking</th>
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</thead>
<tbody>
<tr>
<td>1. Malware</td>
<td>1. Malware</td>
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<tr>
<td>2. Web based attacks</td>
<td>2. Web based attacks</td>
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<tr>
<td>3. Web application attacks</td>
<td>3. Web application attacks</td>
<td></td>
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<tr>
<td>4. Botnets</td>
<td>4. Denial of service</td>
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<tr>
<td>5. Denial of service</td>
<td>5. Botnets</td>
<td></td>
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<tr>
<td>6. Physical damage/theft/loss</td>
<td>6. Phishing</td>
<td></td>
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<tr>
<td>7. Insider threat (malicious, accidental)</td>
<td>7. Spam</td>
<td></td>
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<tr>
<td>8. Phishing</td>
<td>8. Ransomware</td>
<td></td>
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<tr>
<td>11. Data breaches</td>
<td>11. Exploit kits</td>
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<tr>
<td>12. Identity theft</td>
<td>12. Data breaches</td>
<td></td>
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<tr>
<td>13. Information leakage</td>
<td>13. Identity theft</td>
<td></td>
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<tr>
<td>15. Cyber espionage</td>
<td>15. Cyber espionage</td>
<td></td>
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</tbody>
</table>

**Legend:**
- Declining: ▼
- Stable: ☐
- Increasing: ▲
- Ranking: ▲ Going up, ▼ Going down, ☐ Same

*Figure 1: Overview and comparison of the current threat landscape 2016 with the one of 2015.*

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### Business Process

1. Pre-attack phase
2. Cyber Attack Vector (Campaign)
3. Post-attack phase

**Legend:**
- E.g., means based on human engineering
- E.g., monetization based on money made

**Cyber-Threats**
- Cyber threat 1
- Cyber threat 2
- Cyber threat 3
- Cyber threat 4

**Kill Chain**
- Reconnaissance
- Weaponization
- Delivery
- Exploitation
- Installation
- Command & Control
- Actions on Objectives

**Affected Assets**

*Figure 2: Big picture CTI elements from Modus Operandi to affected assets*
The National Cybersecurity and Communications Integration Center (NCCIC) of the Department of Homeland Security (DHS) has taken steps to perform each of its 11 statutorily required cybersecurity functions, such as being a federal civilian interface for sharing cybersecurity-related information with federal and nonfederal entities.

It manages several programs that provide data used in developing 43 products and services in support of the functions.

The programs include monitoring network traffic entering and exiting federal agency networks and analyzing computer network vulnerabilities and threats.

The products and services are provided to its customers in the private sector; federal, state, local, tribal, and territorial government entities; and other partner organizations.

For example, NCCIC issues indicator bulletins, which can contain information related to cyber threat indicators, defensive measures, and cybersecurity risks and incidents and help to fulfill its function to coordinate the sharing of such information across the government.

The National Cybersecurity Protection Act also required NCCIC to carry out its functions in accordance with nine implementing principles, to the extent...
practicable. However, the extent to which NCCIC adhered to the 9 principles when performing the functions is unclear because the center has not yet determined the applicability of the principles to all 11 functions, or established metrics and methods by which to evaluate its performance against the principles.

**GAO identified instances** where NCCIC had implemented its functions in accordance with one or more of the principles. For example, consistent with the principle that it seek and receive appropriate consideration from industry sector specific, academic, and national laboratory expertise, NCCIC coordinated with contacts from industry, academia, and the national laboratories to develop and disseminate vulnerability alerts.

**On the other hand**, GAO also identified instances where the cybersecurity functions were not performed in accordance with the principles. For example, NCCIC is to provide timely technical assistance, risk management support, and incident response capabilities to federal and nonfederal entities; however, it had not established measures or other procedures for ensuring the timeliness of these assessments.

Until NCCIC determines the applicability of the principles to its functions and develops metrics and methods to evaluate its performance against the principles, the center cannot ensure that it is effectively meeting its statutory requirements.

**In addition, GAO identified factors** that impede NCCIC’s ability to more efficiently perform several of its cybersecurity functions. For example, NCCIC officials were unable to completely track and consolidate cyber incidents reported to the center, thereby inhibiting its ability to coordinate the sharing of information across the government.

Similarly, NCCIC may not have ready access to the current contact information for all owners and operators of the most critical cyberdependent infrastructure assets. This lack could impede timely communication with them in the event of a cyber incident. Until NCCIC takes steps to overcome these impediments, it may not be able to efficiently perform its cybersecurity functions and assist federal and nonfederal entities in identifying cyber-based threats, mitigating vulnerabilities, and managing cyber risks.

To read the report:  
Figure 2: The National Cybersecurity and Communications Integration Center Watch Floor

Source: Department of Homeland Security, National Cybersecurity and Communications Integration Center. | GAO-17-183

Source: GAO analysis based on Department of Homeland Security information. | GAO-17-183
One size fits all? Applying Basel III to small banks and savings banks in Germany

Speech by Dr Andreas Dombret, Member of the Executive Board of the Deutsche Bundesbank, at the Handelsblatt conference on "Future strategies for savings banks and Landesbanken", Berlin

1. Introduction

Ladies and gentlemen

A demanding 2017 lies ahead of banks and savings banks: While the sector is witnessing a structural scale-back of sorts, low interest rates and competition from digital service providers are weighing on profit opportunities. At the same time, the risks that need to be managed have not got any smaller - no, the challenges posed by the low-interest-rate environment are, together with mounting interest rate risks, making them even more demanding.

Many institutions are therefore seeking new strategies and rethinking their business models. To make matters more difficult, a raft of further regulatory reforms is just around the corner.

2. Basel III and the completion of regulatory reform

I'm talking, first and foremost, about the finalisation of Basel III in the Basel Committee on Banking Supervision and its transposition into EU law by way of CRR II and CRD V.

The finalisation of Basel III is the topic of much discussion at the moment, which centres specifically around approaches for calculating risk-weighted assets (RWA).

Although many parts of this last package of reforms are already done and dusted - primarily the fundamental revamping of trading-book approaches - some final parts are still being debated in the Basel Committee.

This is the case with respect to reforms concerning the treatment of credit risk and operational risk, for instance.
Many banking industry representatives are afraid that this last package of reforms will create a new set of burdens. I see it the other way around: these reforms are necessary, as they complement and round out the Basel reform process. What we saw during the financial crisis was that the approaches to calculating RWA produced capital requirements that were too low in some cases, and a response is urgently needed.

That is why the Basel III package will not be complete until these further reforms have been implemented, and that is why we are referring to the process as the finalisation of Basel III. What I want, here and now, is to clearly disabuse people of the notion that a completely new standard is being introduced.

Of course, what is being asked of institutions is significant and by no means negligible. However, all outstanding reforms are based on the existing regulatory framework and take it a step further. I therefore believe that they should be easier to implement than many fear.

That said, I do understand why banks and savings banks would be jittery at the prospect of a further increase in capital requirements. That is why, in the Basel III finalisation process, the Bundesbank has come out strongly against a further increase in capital requirements.

Our motto must therefore be that no agreement in Basel is better than a bad agreement. At the same time, though, an international standard has a very high value that must not be underestimated.

This is all the more true in a time in which more and more countries are turning inwards. The Bundesbank will also continue to work towards a compromise on Basel III - one that benefits Germany.

3. Reforms and smaller institutions: a one-size-fits-all solution or graduated rules?

Let me turn now to a second, different topic. In talks with smaller banks and savings banks about the post-crisis reforms, I hear one concern being echoed time and again: that smaller institutions perceive the operational burdens of regulation as being particularly overwhelming.

As they put it, a burden that is much more onerous on small banks and savings banks than on their much larger competitors. This is an issue I take very seriously, for the banks and savings banks are right.
Therefore, for the next few minutes I will discuss the question as to whether banking regulation should be offered only as a one-size-fits-all solution for all banks and savings banks - or whether multiple different regulatory regimes should be created to fit different sizes of institutions.

Ladies and gentlemen, it is my firm view that there is absolutely no way a one-size-fits-all approach can do justice to today's banking landscape - with its very large and complex institutions, its numerous smaller and regional institutions, and the wide expanse of medium-sized institutions! It will positively damage the structure of our banking system - a structure that gave us stability during the financial crisis.

You may well all be familiar with the allegation that the purpose of the new regulatory regime is to encourage more and more consolidation in the industry - including Germany's banking industry. Of course, mergers among banks and savings banks must not be a taboo topic - but, by the same token, they must not be a regulatory objective, either.

I admit to being a fan and proponent of diversity in terms of bank size and business model, as this makes our banking system more stable. Supervisors are not supposed to be making structural policy; rather, they ought to be actively working towards proportionality in regulation.

This is precisely why banking regulation and banking supervision are already designed with a large degree of proportionality. However, the ambitious reforms following the financial crisis have made the rulebook more complex, particularly because the rules were oriented to the epicentre of the financial crisis: large and medium-sized institutions with risky business models.

This new regime has made compliance a much more difficult and time-consuming affair. This overhead is high for each and every institution - regardless of its size.

However, small banks and savings banks, owing to their smaller staff sizes, are far less able to spread the costs of compliance across their employees and have to either hire additional staff or enlist external aid. This leads to comparatively higher burdens.

For that reason - and because smaller institutions pose less of a threat to financial stability than medium-sized to large institutions - I think that offering relief to small banks and savings banks is the right thing to do.
One thing that is of paramount importance to me, however, is this: any relief measures being discussed here have to solve the actual problem - which is not, first and foremost, the minimum capital requirements, but primarily the operational burdens imposed by the need to comply with complex rules.

What this means specifically is that any relief for smaller banks and savings banks must be about removing operational burdens - and of this I am firmly convinced. On the other hand, there cannot and must not be any easing of capital and liquidity requirements.

Moreover, no relief should be permitted to jeopardise financial stability. Medium-sized, highly systemically interconnected institutions - those referred to as "too interconnected to fail" - and those institutions with risky business models should not be provided any relief.

The recent financial crisis, during which many insolvent institutions had to be bailed out, is still fresh in all of our minds. We also need to be careful not to create any loopholes that end up being used by so many small institutions that a situation of general distress results.

I am therefore firmly convinced that institutions need to be regulated with a sense of proportionality without diluting the new regulatory regime. I am committed to ensuring that the debate on greater proportionality is not used as a pretext for reducing capital and liquidity requirements but that it instead results in an actual reduction in operational burdens on smaller banks and savings banks.

4. Greater proportionality - but how?

How can the goal of regulatory proportionality be achieved in a reasonable manner without any side effects?

There are two conceivable approaches.

The first is a details-driven approach that involves introducing special exceptions or adjustments to individual rules.

The second is the creation of separate regulatory frameworks for smaller institutions, on the one hand, and large multinational institutions, on the other.
The details-driven approach has already been pursued as part of the EU reforms I explained earlier, with the Commission emphasising a reduction in the burden on smaller institutions in all reform areas. In its draft consultative document, it has proposed a variety of relief measures and de minimis thresholds, such as in disclosure and reporting requirements.

Institutions below these thresholds will be subject to considerably simplified rules, with some requirements even being abolished altogether, which is something I can only welcome.

We just need to be careful not to set the de minimis thresholds too high, as otherwise there would be considerable risks that were inadequately regulated.

With that in mind, I would like to return to the conviction I expressed earlier on: relief measures that reduce capital and liquidity requirements need extremely careful consideration. Examples include some of the exemptions to the leverage ratio (LR) and the net stable funding ratio (NSFR). Another is the considerable enlargement of the SME factor.

Whereas real economic growth is unlikely to receive any boost, the minimum requirements for institutions’ risk provisioning could be weakened.

Let me come to the second approach: the two-tiered system. The fact that work is being done on a details-driven approach doesn’t mean at all that this fundamental approach cannot be pursued as well.

Specifically, we are talking about a fundamental approach that envisages a dedicated rulebook for smaller institutions - an approach that would systematically address the excess burden placed on smaller institutions’ operational capacities.

In this scenario, only banking multinationals would be subject to the fully loaded Basel III requirements in the EU. This would be appropriate from a risk perspective: we would be regulating global banking institutions under a harmonised set of global rules, while smaller institutions and those operating within a certain region would be governed by graduated rules that do justice to their different business models and risk profiles by setting less complex requirements.

The Basel Committee would also benefit from such a dedicated rulebook for banks operating internationally. If the 28 member states knew that the
fully loaded Basel standards were only applicable to large, internationally active banks, we wouldn't have to worry any more about detailed national exemptions, but could instead devote our entire energy to the key task: standards for large, internationally active banks.

I feel very much that Brussels and Basel should examine this approach with an open mind.

Such a systematic approach to relieving the burden on smaller institutions, to the extent that it is deliverable, is generally superior to a patchwork of exemptions. In this connection, I am very eager to open up a dialogue with the banking community.

To this end, a joint working group was recently established, comprising delegates from the Federal Ministry of Finance, the Bundesbank, BaFin and the central associations of the German banking industry, in order to develop proposals along these lines.

5. Conclusion

Ladies and gentlemen, the implementation of Basel III will impose further demands on banks and savings banks - but I think that less time and effort will be required than many currently fear.

With regard to the implementation of reforms, two things are of paramount importance to me.

Under no circumstances must we water down what has been achieved since the financial crisis; rather, we must maintain a robust regime of rules.

That said, a one-size-fits-all approach will not do justice to the banking landscape.

One of the objectives guiding the actions taken to finalise the agenda of reforms in Europe should therefore be to lessen the operational burdens on small, low-risk institutions - ie to make the final regulatory regime more granular.

The objective must not be to erode minimum capital requirements and thereby open a new gateway for stability problems.

Instead, it is about reducing operational burdens on small institutions without hollowing out capital and liquidity requirements.
This, ladies and gentlemen, is how we can secure a diverse, successful and, above all, stable financial sector - to serve the German economy.

Thank you very much for your attention.
Cybersecurity requirements for financial services companies

Financial Services Superintendent Maria T. Vullo announced that the New York State Department of Financial Services (DFS) has updated its proposed first-in-the-nation cybersecurity regulation to protect New York State from the ever-growing threat of cyber-attacks.

The proposed regulation, which will be effective March 1, 2017, will require banks, insurance companies, and other financial services institutions regulated by DFS to establish and maintain a cybersecurity program designed to protect consumers and ensure the safety and soundness of New York State’s financial services industry.

"New Yorkers must be confident that the banks, insurance companies and the other financial institutions that they rely on are securely handling and establishing necessary protocols that ensure the security and privacy of their sensitive personal information," said Superintendent Vullo. "This updated proposal allows an appropriate period of time for regulated entities to review the rule before it becomes final and make certain that their systems can effectively and efficiently meet the risks associated with cyber threats."

Certification of Compliance with New York State Department of Financial Services Cybersecurity Regulations

The Board of Directors or a Senior Officer(s) of the Covered Entity certifies:

(1) The Board of Directors (or name of Senior Officer(s)) has reviewed documents, reports, certifications and opinions of such officers, employees, representatives, outside vendors and other individuals or entities as necessary;

(2) To the best of the (Board of Directors) or (name of Senior Officer(s)) knowledge, the Cybersecurity Program of (name of Covered Entity as of __________)(date of the Board Resolution or Senior Officer(s) Compliance Finding) for the year ended ___(year for which Board Resolution or Compliance Finding is provided) complies with Part __.

Signed by the Chairperson of the Board of Directors or Senior Officer(s)

(Name)______________________________ Date: __________________

[DFS Portal Filing Instructions]
DFS carefully considered all comments submitted regarding the proposed regulation during the 45-day comment period, which ended on November 14, 2016, and has incorporated those suggestions that DFS deemed appropriate in an updated draft that will be subject to an additional final 30-day comment period. DFS will focus its final review on any new comments that were not previously raised in the original comment process.

To read more:
http://www.dfs.ny.gov/about/press/pr1612281.htm

I'd rather have Bob Solow than an econometric model, but ...

Speech by Mr Stanley Fischer, Vice Chair of the Board of Governors of the Federal Reserve System, at the Warwick Economics Summit, Coventry, United Kingdom

I am grateful to Ellen Meade and Robert Tetlow of the Federal Reserve Board staff for their assistance. Views expressed are mine and not necessarily those of the Federal Reserve Board or the Federal Open Market Committee.

Introduction: Econometric models and a eureka moment

Eureka moments are rare in all fields, not least in economics. One such moment came to me when I was an undergraduate at the London School of Economics in the 1960s. I was talking to a friend who was telling me about econometric models. He explained that it would soon be possible to build a mathematical model that would accurately predict the future course of the economy.

It was but a step from there to realize that the problems of policymaking would soon be over. All it would take was a bit of algebra to solve for the policies that would produce the desired values of the target variables.

It was a wonderful prospect, and it remains a wonderful idea. But it has not yet happened. I want to talk about why not and about some of the consequences for policymaking.

How the Fed makes monetary policy

Let me begin with how we make monetary policy at the Fed. The Federal Reserve System has both centralized and regional characteristics. The System comprises the Board of Governors, located in Washington, D.C., and 12 regional Reserve Banks in cities across the United States (figure 1).

The members of the Board of Governors are appointed by the President, subject to confirmation by the U.S. Senate. In contrast, the president of each Reserve Bank is selected by that Reserve Bank's board of directors, subject to the approval of the Board of Governors. This scheme was designed both to insulate the Federal Reserve from day-to-day political
pressures and to ensure that all parts of the country have a voice in the central bank.

Figure 1: The Federal Reserve System

Our monetary policy committee—the Federal Open Market Committee (FOMC)—meets eight times a year at the Federal Reserve Board in Washington to make decisions about whether to change the short-term policy rate and other aspects of monetary policy.

Sitting around the massive conference table will be the policymakers of the Fed—the members of the Board of Governors and the 12 Reserve Bank presidents.

The Board has a maximum of seven members, but at present, two slots are empty. All of the Federal Reserve Bank presidents take part in the discussion, although only five of them have the vote at any one time.

Each Board member or Reserve Bank president has his or her own way of preparing for those meetings. In the case of the Reserve Bank presidents, these preparations can include consultations with their boards of directors, business contacts in their Districts, market experts, and other sources. Written materials are distributed to all FOMC participants in advance of the meeting.
The most extensive of these materials is called the Tealbook, a two-part document prepared by the Board's staff and distributed to Board members and Reserve Bank presidents.

The first part of the Tealbook contains a summary and analysis of recent economic and financial developments in the United States and foreign economies, the Board staff’s economic forecast, and dozens of tables and figures.

The Board staff’s baseline forecast of the most likely path for the economy over the next several years is a judgmental one, built by staff economists using their expertise on particular sectors together with econometric models and other inputs.

In addition to this baseline judgmental forecast, the staff provides model-based simulations of a number of alternative scenarios or risks—for instance, if the price of oil were to be lower, the U.S. dollar stronger, or wage growth higher than envisioned in the baseline projection. These scenarios are generated using one or more of the Board’s macroeconomic models.

The Tealbook also includes computations of policy paths derived from a range of policy rules and model-based estimates of optimal policy. That is to say, before our FOMC meetings, we examine analyses and forecasts produced by our staff as well as empirical results from a range of models—and, of course, material that each participant in the FOMC has gathered from his or her own research and experience.

The second part of the Tealbook includes the specific policy options that we consider at the meeting. Typically, there are three policy alternatives—A, B, and C—ranging from dovish to hawkish, with a centrist one in between. This part of the Tealbook includes an analysis of each alternative and a draft of the associated public statement that the FOMC would release after the conclusion of its meeting.

Four times a year, before the March, June, September, and December FOMC meetings, Board members and Reserve Bank presidents submit their own projections for real gross domestic product (GDP) growth, the unemployment rate, inflation, and the Committee's policy rate target, the federal funds rate. These forecasts are released to the public shortly after the FOMC meeting in the Summary of Economic Projections (SEP), and they receive a good deal of scrutiny by financial market participants and journalists.
One important but underappreciated aspect of the SEP is that its projections are based on each individual's assessment of appropriate monetary policy. Each FOMC participant writes down what he or she regards as the appropriate path for policy. They do not write down what they expect the Committee to do.

Yet the public often misinterprets the interest rate paths we write down as a projection of the Committee's policy path or a commitment to a particular path.

**Models and the modeling of monetary policy**

Now, that is a lot of talk about the process of monetary policymaking. Let me turn to some of the machinery behind that process—in particular, to macroeconomic models and their role in assisting the FOMC's decisionmaking. The Board staff maintains several models; I will focus on the FRB/US model, the best known and most used of the models the Board staff has at its disposal.

**FRB/US is an estimated, large-scale, general-equilibrium, New Keynesian model.**

Each of the adjectives is noteworthy, so I will briefly cover each in order.

**First**, for models to be of use to guide monetary policy, they need to be estimated such that they do a reasonable job of fitting the data; only under such circumstances can their quantitative predictions be taken as useful.

Of course, they do not fit the data perfectly. The economy is an extremely complicated mechanism, and every macroeconomic model is a vast simplification of reality.

**Second**, the large scale of FRB/US is an advantage in that it can perform a wide variety of computational "what if" experiments. It is often the case that two macroeconomic phenomena happen at the same time—a increase in the value of equity shares and an appreciation of the dollar, for example—and it is an obvious benefit if the combination of the two can be analyzed within the same modeling framework.

Third, the general-equilibrium structure of the model is also important: It is helpful to be able to understand, for example, if a hypothetical appreciation of the dollar might have something to do with an increase in equity share values or whether an independent causal force is at work.
Finally, the New Keynesian nature of the model implies that wages and prices are sticky and that markets adjust slowly to their longer-run equilibria.

Much of the usefulness of the FRB/US model stems from its careful modeling of the monetary transmission mechanism and the key role that the expectations of households, workers, firms, and investors play in that mechanism. The monetary policy transmission mechanism is the means through which changes in a central bank’s policy instrument affect the economy. In the FRB/US model, the usual policy instrument—the federal funds rate—plays no direct role in the economy.

Rather, an increase in the federal funds rate affects expectations of future values of that rate, which in turn affect interest rates on longer-term bonds, equity prices, and the exchange value of the U.S. dollar.

Households and firms are forward looking in that the adjustment costs just mentioned oblige households to set out a plan—a contingency plan—for consumption, savings, and employment for the future. Increases in interest rates influence these plans, as they do the investment and hiring plans of firms. All of those decisions, in turn, shape employment, output, and inflation.

So the expectations of decision makers, be they households, firms, or investors, are at the center of how monetary policy works—both in the real world and in FRB/US. At the same time, the economy is subject to economic shocks that perturb the plans of economic agents and alter their expectations, as well as the plans and expectations of policymakers.

The role of monetary policymakers is to respond to economic shocks in as efficient a manner as possible, and thereby influence economic outcomes and expectations, in order to achieve the central bank’s assigned goals. Indeed, the conduct of monetary policy is often described as a matter of expectations management.

How might policymakers best respond to economic disturbances and influence expectations in order to achieve their policy objectives?

To help FOMC policymakers answer that question, the Tealbook for each meeting provides monetary policy prescriptions from a variety of simple policy rules, including John Taylor’s famous rule (or family of rules).
Economic conditions and the outlook change from meeting to meeting, and, not surprisingly, the prescriptions of simple policy rules change with them.

The Tealbook from the April 2011 meeting provides an example of the role of policy rules in the FOMC's discussions. The reason I focus on a meeting so long ago is that materials from FOMC meetings in 2011—including the transcripts and Tealbooks—have recently been released to the public, following the usual five-year lag.

At the time of the April 2011 meeting, the federal funds rate had been near zero for almost 2-1/2 years; moreover, the FOMC had been indicating in its post-meeting statements that it expected to keep the funds rate target at exceptionally low levels "for an extended period."

Figure 2 reproduces panels from the April 2011 Tealbook that show the staff's baseline forecast—the solid black line—as well as prescriptions from three simple policy rules that were generated using the FRB/US model.

The panel on the left shows the paths for the federal funds rate, while the panels on the right show the implications of those policy prescriptions for the unemployment rate and core PCE (personal consumption expenditures) price inflation, respectively.
Each of the rules is regarded as mainstream. Note that there are substantial differences in the prescribed policy paths, both in terms of how long the interest rate remains near zero as well as how gradual or rapid is the pace of tightening once the interest rate begins to increase. Those differences produce different outcomes for unemployment and inflation, as can be seen in the two panels on the right of figure 2.

The first-difference rule is the most hawkish in figure 2: It raises the federal funds rate more rapidly than the other three rules whose results are shown. Correspondingly, in the panels to the right of figure 2, the unemployment rate is higher on the broken green line than on the other paths for unemployment that are associated with lower interest rates. And you can figure out why the broken green line for core PCE inflation is lower than for the other paths in the panel on the right-hand side of figure 2.

How does the FOMC choose its interest rate decision? Fundamentally, it uses charts like those shown in figure 2 as an important input into the discussion. And in their discussion, members of the FOMC explain their policy choices, and try to persuade other members of the FOMC of their viewpoints.

**One monetary policy decision: August 2011**

As an example of such a process, I want to discuss the important decision taken at the August 2011 meeting. At the time policymakers gathered in
Washington for the meeting, the FOMC's target for the federal funds rate had been set to nearly zero for more than 2-1/2 years. And although the economy had improved from the depths of the Great Recession, the unemployment rate was still above 9 percent.

Over the summer, the economic outlook darkened considerably. In response, in August, the staff's Tealbook forecast projected that the federal funds rate would remain near zero three quarters longer than what the staff had expected in June.

Figure 3, taken from the August 2011 Tealbook, illustrates how the change in the economic outlook affected FRB/US simulations of optimal monetary policy.

As you know, an optimal policy is a path for the policy instrument that minimizes the shortfalls in economic outcomes relative to policymakers' goals; in this case, the optimal policy path is computed using the FRB/US model and takes the staff's baseline outlook as given.

In principle, optimal policy simulations deliver better outcomes than simple policy rules, but those outcomes are conditional on some strong assumptions.

The black line in figure 3 shows the optimal policy path in the August 2011 Tealbook conditional on interest rates being constrained to remain above zero.

Comparing the black line with its counterpart from the Tealbook prepared for the previous FOMC meeting in June—the red dotted line—you can see that the date at which the policy rate was expected to rise above zero had moved out by about a year.

Even an optimal policy path (the blue dashed line) that was not constrained by the zero lower bound—and was therefore infeasible—did not cross into positive territory until mid-2014.

Thus, the prescriptions of optimal policy were saying not only that the Committee's interest rate should remain at zero for some time to come, but also that that period of time should be considerably longer than previously thought.

At the August 2011 FOMC meeting, most members agreed that the economic outlook had deteriorated by enough to warrant a response. Some
of them judged that additional stimulus was called for because they thought the economy would not get back to full employment without it.

These policymakers argued that a strengthening of the language in the Committee’s post-meeting statement about how long they expected the federal funds rate to remain exceptionally low would be appropriate.

They judged that this response would influence expectations and thus longer-term interest rates, and would help the public understand the Committee's intentions.

The change that was proposed, and eventually adopted, replaced the phrase that characterized how long the Committee expected the federal funds rate would remain low—"for an extended period"—with "at least through mid-2013."

As shown in figure 4, this subtle but important change in language in the FOMC's post-meeting statement induced a decline in interest rates across the term structure.

How was the decision to change the forward-guidance language reached? Ultimately, the decision required the adept leadership of Chairman Ben Bernanke, lengthy deliberations of Board members and Reserve Bank presidents, and staff briefings and forecasts.
The decision was a joint product, reflecting the experience of policymakers and the implicit or explicit models or views of the world they had brought with them to the FOMC table, statistical models, an understanding of historical episodes that offered instructive and relevant parallels, and other information gleaned from the outside world.

And what do I take from this episode? The interest rate decision taken in August 2011 was unusual in that a decision was made about the likely path of future interest rates. Most often, the FOMC is deciding what interest rate to set at its current meeting.

Either way, in reaching its decision, the Committee will examine the prescriptions of different monetary rules and the implications of different model simulations.

But it should never decide what to do until it has carefully discussed the economic logic that underlies its decision. A monetary rule, or a model simulation, or both, will likely be part of the economic case supporting a monetary policy decision, but they are rarely the full justification for the decision.

Sometimes a monetary policy committee will make a decision that is not consistent with the prescriptions of standard monetary rules—and that may well be the right decision. Further, in modern times, the policy statement of the monetary policy committee will seek to explain why the committee is making the decision it is announcing.

The quality of those explanations is a critical part of the policy process, for good decisions and good explanations of those decisions help build the credibility of the central bank—and a credible central bank is a more effective central bank.

The bottom line

As the August 2011 meeting illustrates, the eureka moment I thought I had 50-plus years ago was a chimera.

Why is that?

First, the economy is very complex, and models that attempt to approximate that complexity can sometimes let us down. A particular difficulty is that expectations of the future play a critical role in determining how the economy Reacts to a policy change.
Moreover, the economy changes over time—this means that policymakers need to be able to adapt their models promptly and accurately in real time.

And, finally, no one model or policy rule can capture the varied experiences and views brought to policymaking by a committee. All of these factors and more recommend against accepting the prescriptions of any one model or policy rule at face value.

And now to the bottom line: The title of my speech is an incomplete quotation of something Paul Samuelson once said. What Samuelson said was this, "I’d rather have Bob Solow than an econometric model, but I’d rather have Bob Solow with an econometric model than without one." And Samuelson, who was a shameless eclectic, would almost certainly have said essentially the same thing about policy rules.

Thank you.
Chancellor's speech at the National Cyber Security Centre opening

Chancellor Philip Hammond says UK to invest "another £1.9 billion to further bolster our armoury against cyber-attack"

It is a pleasure to be here today at the launch of the National Cyber Security Centre, having been involved in this project, in various roles, since its inception.

In my current role, as Chancellor, I know how much the internet revolution has transformed our economy. And how much it holds the promise of future growth and prosperity for our country.

But as we enter the so-called ‘Fourth Industrial Revolution’, we have to be alive to the fact that this transformation is not without its challenges.

The development of artificial intelligence heralds a technological revolution that will fundamentally change our lives.

But it will also disrupt existing patterns of work, life, and society.

The fact is that the greater connectivity that will enable the development of the digital economy. Is also a source of vulnerability.

And those who want to exploit that vulnerability have not been idle.

The cyber attacks we are seeing are increasing in their frequency, their severity, and their sophistication.

In the first three months of its existence, the NCSC has already mobilised to respond to attacks on 188 occasions.

And high-profile incidents with Sony, TalkTalk, and TV Monde have reminded us of the scale of damage that a single successful cyber-attack can inflict.

So this new centre, and its work, is vitally important.

This is a unique institution.
Our overseas competitors can only dream of the level of interagency cooperation that underpins it.

And we in Britain can be extremely proud to be blazing a trail that others will surely follow.

There are three key points to make about the way the centre will approach its task.

First, it will not just focus on protecting against major attacks on critical national infrastructure, but also raising our security capability against day to day malicious cyber activity.

The most dramatic threats are the high-end sophisticated state-sponsored attacks.

But the most common threat that businesses and the general public face are the less sophisticated, mass targeted attacks, from phishing to email viruses.

83% of UK businesses are online.

The average British home has 8 devices connected to the internet.

This provides enormous potential for day to day attacks, from electronic data theft to online ransom.

The ONS estimate that there were two million such incidents in the past twelve months alone.

If these numbers were included in our crime figures, the UK’s crime rate would double.

So the NCSC will play a unique and crucial role bringing together the public and the business community on the one hand, and our intelligence and security agencies on the other.

Second, it will focus on partnership.

Our intelligence and security agencies are the best in the world. No question. Our digital sector is also the best in the world – contributing a bigger proportion of our GDP every year than any other country in the G20.
And to prove it we have the highest proportion of online shoppers in Europe.

And what we are doing here is, bringing them together, this centre will work hand in hand with industry to keep the UK safe.

65% of large businesses reported a cyber breach or attack in the past 12 months.

Yet nine out of ten businesses don’t even have an incident management plan in the event of a cyber breach. Business has to sharpen its approach as the scale of the threat from cyber increases and intensifies.

Just as you would expect a shop on the high street to fix its locks and burglar alarms, so businesses operating digitally need to fix their online security.

And this Centre stands ready to help them in doing that.

It can be as simple as providing guidance on things like ransomware and device security so that the public and businesses can protect themselves.

Or it could be drawing on our most sophisticated capabilities to road-test and make available safeguards against more sophisticated threats.

Or mobilising the resources of public and private sectors to intercept, defeat and mitigate the effects of a concerted cyber assault.

Either way, its success will rely on partnerships.

The third and final point I want to make is that we are prepared to invest the necessary resources to get this right.

We invested £860 million on enhancing our cyber defences in the last Parliament.

And we are investing another £1.9 billion to further bolster our armoury against cyber-attack in this Parliament, as well as developing our offensive cyber capability to deter, and if needs be, retaliate against, those who seek to do us harm in cyberspace, a new and critical domain of our defence. And all this is set in the context of our commitment to meeting the NATO pledge to spend 2% of our national income on defence for every year of this decade.
At the beginning of this month, the UK signed the NATO Cyber Defence Memorandum of Understanding so that we can share our expertise with our international allies, and learn from their experiences.

And today I am delighted to announce a new kind of partnership, closer to home, here at this centre.

We will invite business to second up to 100 employees to come and work in the NCSC – allowing us to draw on the best and the brightest in industry - to test and to challenge the government’s thinking as we take this project forward.

And for these people to then return to the private sector and draw on their experience at NCSC to drive change within industry.

Because the government cannot protect businesses and the general public from the risks of cyber-attack on its own.

It has to be a team effort.

It is only in this way that we can stay one step ahead of the scale and pace of the threat we face. I want to thank the staff here at the Centre for their dedication, commitment, and skill.

And I want to thank our industry partners for teaming up with government, to ensure that the UK becomes truly, the safest and most secure space for digital business.

Thank you.
Reflecting diversity, choosing inclusion

Speech by Mr Mark Carney, Governor of the Bank of England and Chairman of the Financial Stability Board, at the Bank of England

I am grateful to Jennifer Nemeth, Anne Wetherilt and Iain de Weymarn for their assistance in preparing these remarks, and to Richard Galletly, Cat Hines and Daniel Nixon for background research.

And there were never, in the world, two opinions alike, no more than two hairs, or two grains; their most universal quality is diversity.

(Michel de Montaigne, Essais, Book II, Chapter 37)

Introduction

The Bank of England recognises that to pursue its mission it must reflect the diversity of the people it serves. That has not always been the case. Historically, there were times when this institution was run by the City for the City. Our first female Court member, Frances Heaton was only appointed in 1993, while our first Black, Asian and Minority Ethnic (BAME) member, Lord Morris, followed five years later. Ten years ago our graduate intake was drawn from just 11 universities. And I am the 120th in a very long line of male Governors of the Bank.

Frequent charges levelled at this central bank – like many of our peers – include being mono-culture, secretive and ridden with groupthink.

Those charges began to lose their force in the face of significant efforts by my predecessors. But despite that progress, when the Bank was reunited with the PRA we knew that we still had to do much, much more.

So three years ago we made Diverse and Talented a central pillar of our first strategic plan. We value diversity for at least three reasons.

First, it is the right thing to do; a public institution should seek to reflect the public it serves.

Second, it helps to build the trust we need to deliver our remits. i
Third, it is well established that diversity leads to more creative thinking and reduces the risks of groupthink and bias.

It isn’t enough for us to reflect diversity, however; we need also to choose inclusiveness. Inclusiveness unlocks the true value of an organisation’s diversity; through inclusion people can realise their full potential.

That’s why as we increase the diversity of the Bank, we are focussing on building a culture that values diverse ideas, encourages open debate, and empowers people at all levels to take initiative.

Since these two ideals go hand in hand, today I will reflect on both diversity and inclusion: what they mean, why they matter, and how they are best delivered in a modern central bank.

To read more:  
http://www.bis.org/review/r170210b.pdf
Productivity - a collective enigma?

François Villeroy de Galhau, Governor of the Bank of France, at the Bank of France - France Stratégie Conference, Paris

Welcome to all of you. It gives me great pleasure to be able to open this conference on French productivity, organised in conjunction with France Stratégie.

The subject is one that is both topical and of great importance to central banks: productivity is one of the principal drivers of growth, and its dynamics are a strong determinant of potential growth, that which is compatible with price stability.

After the major wave of expansion witnessed during Les Trente Glorieuses, which was particularly marked in the case of France, productivity growth in advanced countries has slowed in successive stages since the 1970s.

Today, it has fallen back to a pace that is historically weak.

What are the common factors behind this slowdown in productivity? And is there anything specific to France?

I don't believe so: if there is one thing that is specific to France, it is the high level of hourly productivity - one of the highest in the world, alongside that of the United States and Germany. So, rather than being a French enigma, the enigma we are looking at this morning seems to me to be more of a collective phenomenon. By way of introduction, I would just like to go back over the three collective
hypotheses at the heart of today's debate, before nonetheless going on to examine a few factors that are indeed specific to France.

**Does the problem lie in the measurement of growth?**

The first theory is that there is in fact no slowdown, as we are not measuring growth properly due to the rise of the digital economy. On 16 January this year, the Banque de France held a conference that notably discussed this issue in relation to the US economy.

The main sources of measurement errors were: first, the estimation of quality-adjusted prices for new technology, as falls in prices tend to be underestimated in US national accounts; and second, product entry and exit, which makes it difficult to estimate changes in prices over time.

This could lead to a significant upward revision to US productivity since 1983: by 1.1 percentage points per year at the top end of estimates, according to Philippe Aghion and his co-authors.

Nevertheless, even allowing for these corrections, there has still been a slowdown since the mid-2000s. Indeed, the measurement errors were just as significant before this period. That said, this work does provide some grounds for optimism.

First, growth in hi-tech sectors, and therefore technological progress, is stronger than we previously thought.

Second, some of the gains in well-being linked to new technologies fall outside the scope of the market economy and, as a result, are not recognised in national accounts.

The digital economy has delivered huge gains in leisure time, for example, by simplifying certain administrative tasks, and led to the development of free services, without any of these benefits appearing in conventional measures of output.

It has also prompted the rise of the informal economy (C to C services), which is particularly tricky to recognise in the accounts. Our conference today will provide an opportunity to look specifically at the case of France, thanks to a presentation by INSEE.
Are we witnessing a permanent slowdown in the contribution of technical progress to productivity growth?

Assuming that there has been a slowdown in productivity, the second hypothesis is that it stems from a slowdown in innovation and in its contribution to productivity.

The great wave of productivity growth during Les Trente Glorieuses in France was fuelled by advances in a large number of domains: technical progress with electricity, the combustion engine, chemicals and telecommunications, but also the emergence of new methods of labour organisation and new management practices.

Today, what potential contribution can information and communication technologies (ICTs) make to growth? The first ICT wave has been limited in duration and in scale, and has only been felt to a small extent in many countries, including France.

This has prompted some economists, such as Robert Gordon, to doubt that technology can make a significant contribution in the future. But in a country such as France, which already enjoys a high productivity level, there is still plenty of room for progress in the diffusion of ICTs, both in terms of the speed and quantity.

The share of ICT capital stock in GDP is markedly lower in France than in the United States and the United Kingdom. Getting rid of this lag would deliver substantial gains in growth for France.

Third hypothesis, a dearth of investment?

Catching up to the technological frontier will require investment in ICTs as well as in research and development.

This investment is vital in order to incorporate innovation into production processes. Yet it is also a lot riskier than other types of investment, for example in construction. Indeed, it notably combines a low or non-existent resale value with uncertain future revenue flows.

Like the rest of the innovation economy, therefore, it needs an appropriate form of financing - one that relies more on equity as opposed to debt.

However, the cost of capital remains high despite the sharp drop in interest rates over the past 20 years.
According to Banque de France calculations, the nominal cost of capital for France's major listed companies is still between 8% and 9%, whereas the risk-free rate is currently around 0%.

This particularly high cost places a drag on investment, and hence on innovation and productivity growth.

**Are there any factors that are specific to France?**

There are nonetheless a number of French specificities that could be playing a part in slowing productivity.

Let me just cite three:

- **First**, failings in our system of initial and lifelong training, as highlighted by the OECD’s PISA and PIAAC surveys [slide]. France stands out as scoring only average overall among OECD countries, and, most importantly, as having high levels of inequality linked to parents' social background.

- **Second**, corporate investment tends to be weighted more towards construction at the expense of equipment machinery and intangible assets. And while we’re on that subject, it is essential that French banks finance intangible assets better than they do today.

- **Lastly**, the specific features of the French labour market and the associated policies. A number of studies have highlighted factors such as the shortening of the duration of temporary contracts. Questions have also been raised as to the impact of labour policies. How can we strike the right balance between supporting productivity and supporting jobs? Policies aimed at reducing the cost of low-skilled labour - be they targeted cuts in employers’ social charges or the CICE - all have a positive effect on GDP per capita via an increase in the employment rate; but they can also have a detrimental effect on productivity, especially when targeted at sectors with low productivity. Put another way, these policies make it all the more necessary that we improve our system of initial and lifelong learning - failing this, we risk fuelling a downwards spiral in labour skills and productivity.

These questions aside, one thing is clear in the case of France - and 2016’s too-feeble growth of 1.1%, as published yesterday, confirms it: estimates from national and international institutions all point to low levels of potential growth, at around 1.2%, and relatively high levels of structural
unemployment (the equivalent of the NAIRU in English-speaking countries), at around 9%. Clearly, we cannot be content with these levels.

All of which brings us back, overwhelmingly, to our four key focuses for reform: Enterprise, Education, Employment and Expenditure reduction (public sector).

Our northern European neighbours have shown by example that these reforms are not incompatible with our shared European social model.

Studies by the Banque de France show in particular that reforms to the goods and services market could boost the productivity of the French economy by between 3% and 5% in the long-term. Without further ado then, let me pass the floor to Fabrice Lenglart, and I wish you all a fruitful and enjoyable conference.
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