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News for the Board of Directors, October 2017

Dear Member,

Tom Kennedy, Chief Executive Officer at Raytheon, has something interesting to say about cybersecurity:

"Every time someone mentions cybersecurity, I see an iceberg. It's a handy metaphor to grasp both the enormity and the nature of the risk of using something connected to the Internet.

Here's the thing about icebergs: it's not the size that will sink you. It's the jagged edges lurking under the surface. You never see them coming.

The same idea applies to cybersecurity. It's not just the number of threats that's dangerous. It's that so many of them exist down in the depths, where you might not know they're there.

Over the years, people have learned to avoid the tip of the iceberg – the obvious threats to traditional IT infrastructure like personal computers. But now, those same people are taking their first look beneath the water line. And they're finding the hazards are everywhere.

I'm talking, of course, about the Internet of Things. For consumers, this means everything from smartphone-controlled light fixtures to cars that stream performance data to the manufacturer.

Refrigerators, coffee makers, even toilets – they're all being connected for the sake of convenience, and together they're giving hackers hundreds of millions of vectors for attack. And those bad actors, recognizing a wealth of opportunity, are constantly developing more sophisticated and aggressive methods of attack.

Recently we've seen major malware attacks that crippled retailers, banks and even hospitals. Most major institutions have a plan on what they would do if, say, a group of armed robbers burst in, took control of their assets, disrupted their daily operations and threatened customers. But far fewer institutions have thought about what they would do if cyber criminals took control of their digital operations, held critical files and data hostage, and put their customers at risk.

These potential threats now extend to every part of running a business. One of the biggest threats, for example, is to operational technology. Automation has made factories faster and more efficient than ever. It has also made them susceptible to attack.

The interfaces that control this machinery require diligent cybersecurity measures such as software patches and constant monitoring for signs of intrusion. Anything short of that puts the assembly line, the products and the customers at risk.

But companies can't stop at minding their own shop. They also need to know how their supply chains are protecting themselves, and whether they're doing enough. The same goes for partner companies and acquisitions. A single weakness can put the whole network in danger.

You can see, then, why businesses need cybersecurity protecting everything they use, from the machines in their factories to the systems that control the air conditioning. And if any of their products communicate with anything else, they need to protect those, too.

At my company, whenever we develop new systems, we use an integrated product team. The idea is to get engineers from different disciplines – electrical, mechanical, software – working together to make sure all the dimensions are covered. Today, that team includes cybersecurity engineers. Not only are we doing our normal designs, we're doing them in a way that makes them resilient to cyber-attack.

Technology has made our lives more convenient and our businesses more efficient. Those are good things. But it has also created that iceberg I think about so much. Luckily, we're starting to realize there's much more to it than what we can see. We just have to know where to look."

ENISA Opinion Paper on Cryptocurrencies in the EU

As cryptocurrencies are increasingly employed for both legitimate and illicit purposes, there is a need for a debate on the cybersecurity concerns that may arise surrounding their use.

A number of administrations are well advanced in their plans to authorise the use of cryptocurrencies. For example, Japan has legalized the use of one cryptocurrency and the Philippines has granted cryptocurrency exchange licenses.

The main drivers for the adoption of cryptocurrencies, according to ENISA, include cost reductions, improved risk management, and automated regulatory compliance.

The increasing use of cryptocurrencies may yield a number of benefits for citizens and industry. For instance, the decreased transaction and operational costs associated with cross-border transfer of funds could (optimistically) reduce the total global costs for remittances by up to EUR 20 billion.

However, with the growing use of cryptocurrencies, greater attention needs to be given to the cybersecurity associated with their use, as well as the regulatory aspects, in order to protect the users and society from illegal activities, including money laundering and terrorism financing.

At present, ENISA understands that there is no EU law addressing cryptocurrencies specifically.

In this paper, ENISA presents its views on cryptocurrencies, summarising the technical aspects thereof, highlighting the key risks they may involve and discussing various potential regulatory approaches.

An effective dialogue on cryptocurrencies requires as a first step developing a common taxonomy at EU level.
The Commission currently provides a working definition of virtual currencies as: "a digital representation of value that is neither issued by a

central bank or a public authority, nor necessarily attached to a fiat currency, but is accepted by natural or legal persons as a means of payment and can be transferred, stored or traded electronically".

This broad categorisation of virtual currencies can be further broken down into various subcategories.

Virtual currencies can for instance be convertible, meaning they can be directly exchanged for "real" currency by virtual currency exchangers, or non-convertible, meaning they cannot be exchanged for real currency.

Furthermore, virtual currencies can be centralised, meaning they have a single administrating authority, or decentralised.

ENISA considers cryptocurrencies as a subset of virtual currencies that are used in a decentralised manner, using for example Blockchain technology.

A proposed definition for cryptocurrency is:

"Cryptocurrency refers to a math-based, decentralised convertible virtual currency that is protected by cryptography.—i.e., it incorporates principles of cryptography to implement a distributed, decentralised, secure information economy".

Though neither of these definitions are as of yet legally binding, they provide a framework for engaging with technical and policy-related issues surrounding cryptocurrencies from a cybersecurity perspective.

As with other fiat currencies, the value of cryptocurrencies is driven by supply and demand.

Where the supply of a cryptocurrency is capped, and demand exceeds supply, the value of the cryptocurrency will rise.

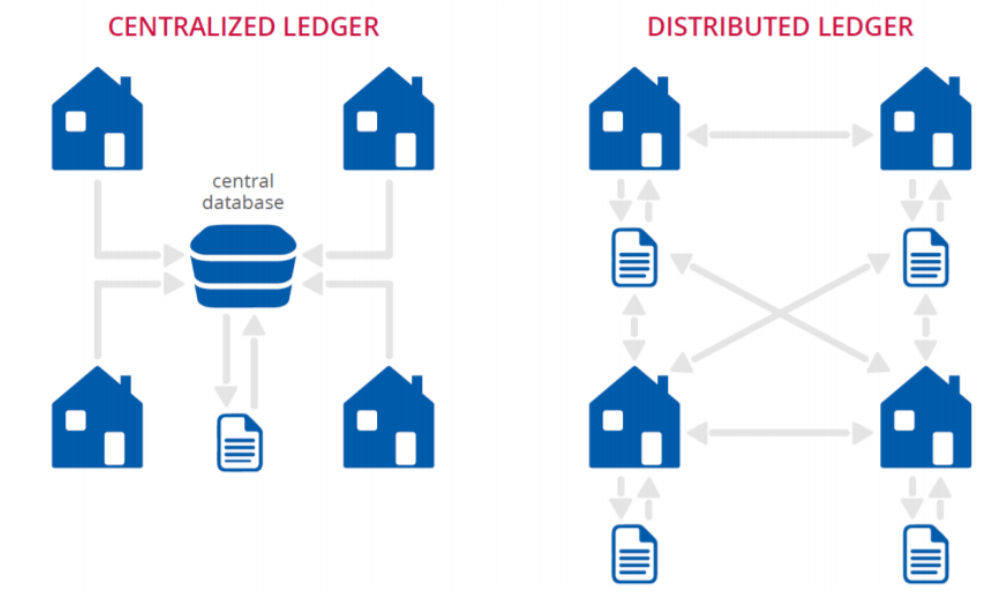
Presently, Bitcoin is a good example of this situation.

At the time of writing of this paper, 856 cryptocurrencies were in existence, with a total market capitalisation of close to 120 billion euros.

Many of the new cryptocurrencies are attempting to address existing inefficiencies, such as the number of transactions being processed per second and the use of smart contracts.

At the time of writing, approximately 3 billion euros of capital was being invested in cryptocurrencies per day.

To read more:
https://www.enisa.europa.eu/publications/enisa-position-papers-and-opinions/enisa-opinion-paper-on-cryptocurrencies-in-the-eu



The meaning of "data dependence" - an economic progress report

Stephen S Poloz, Governor of the Bank of Canada, to the St. John's Board of Trade, St. John's, Newfoundland and Labrador

I would like to thank Russell Barnett and David Amirault for their help in preparing this speech.

Introduction

I am always happy to be here in St. John's, a unique corner of our country. Given the city's geography, its history and rich culture, those of you who get to call St. John's home are fortunate, indeed.

The idea of "home" is a preoccupation for us at the Bank of Canada. We have been working since the global recession almost a decade ago to bring the Canadian economy home. What I want to do today is give you a sense of how far the economy has come and how much further it has to go, and talk about some signs to watch for along the way.

The goal of our monetary policy is to keep inflation low, stable and predictable. Under the terms of the agreement between the Bank and the federal government, we aim for an annual rate of consumer price inflation of 2 per cent. Of course, unforeseen events can always push inflation up or down. So, our agreement sets out a target band of 1 to 3 per cent.

What do I mean by "home"? For us, home is at the intersection of full capacity and 2 per cent inflation. We expect that when the economy reaches full capacity, inflation will converge on the 2 per cent midpoint of the target band. That is why we are so preoccupied with the idea of home.

Our adjustments to interest rates affect economic activity, which affects the gap between the level of output and full capacity, which in turn affects inflation. However, there is an important consideration that sometimes gets lost: this process takes time.

Any change in interest rates will not have its full impact on inflation for about a year and a half to two years. So, when we make our monetary policy decisions, we are less concerned about the latest inflation numbers-which are already a month old-than we are about where inflation will be in the future.

Forecasting inflation: data, sentiment and intelligence

That brings us to the question of how to forecast future inflation. The place to start is with economic models. Models are indispensable for developing forecasts of inflation and the rest of the economy. However, no central banker would ever base a monetary policy decision solely on a projection from an economic model. Models provide us with a coherent starting point, but we need to apply real-world judgment before reaching a policy decision.

A lot of this judgment comes from conversations with people. Earlier this year, Deputy Governor Lynn Patterson spokeabout how the Bank gleans intelligence from financial markets. Equally important are efforts to gauge business sentiment-sometimes called "soft data"-and to gather intelligence about the real economy from business leaders.

We need to understand the view from both Main Street and Bay Street to help inform our outlook for growth and inflation. This is where our regional offices, staffed by people who routinely visit companies across the country, play a vital role.

One of the most important vehicles for these efforts is our Business Outlook Survey (BOS), which is celebrating its 20thanniversary this year. The informal process for these visits began when I was at the Bank in the early 1990s. In fact, the first time I visited St. John's was to do some of those consultations. Through our surveys and conversations with business leaders, we regularly get clues about economic trends before they show up in the official economic statistics.

Let me illustrate. The roughly 50 per cent drop in oil prices during 2014 represented a cut of roughly $60 billion per year in export revenue for oil producers. Some of the impacts of this cut were immediately obvious and

predictable. We knew oil-intensive regions would be hurt by the drop in income and that oil companies would reduce their spending. Certainly, the people of this city and province are aware of the pain caused by the oil price shock.

However, the BOS taken late in 2014, together with additional discussions we had with energy companies, revealed warning signs that went well beyond the decline in business investment. For example, companies in this region told us that they were being flooded by résumés of workers returning from Alberta. Service firms, such as hotel and trucking companies, told us about bookings being suddenly cancelled. Energy-service companies told us that previously signed contracts for construction and exploration work were being renegotiated, or even terminated.

So, well before the shock started to show up in the statistics, we could see that it would have a significant negative effect on the Canadian economy and the outlook for inflation. This was crucial to our decision to lower interest rates in January 2015. And, as companies cut their investment intentions further, we lowered interest rates again the following July.

To be clear, our economic models correctly predicted that the collapse in oil prices would be a serious blow. Specifically, our main policy model gave us invaluable insights into how the shock would affect the economy and how the subsequent adjustments would unfold. But the fact that everything we were hearing was supporting these insights increased our confidence that cutting rates was the right course of action.

Adjusting to lower oil prices

Obviously, the drop in oil prices was a significant detour for the Canadian economy. We knew that the shock would trigger a complex series of adjustments and create significant hardship for many people.

Basically, our models projected that the economy would go through the reverse of its experience in 2010-14, when high oil prices led to strong increases in business investment and national income. Provinces where the energy sector is relatively more important, such as Newfoundland and Labrador, would feel these effects most acutely. This underscores one of the fundamental challenges for policy-makers, that economic shocks can have very different effects across Canada's regions.

In terms of adjustments, we anticipated that lower oil prices would mean not only a decline in the energy sector, but also a pickup in growth in the

non-energy sector. We expected exports to be boosted by a lower Canadian dollar. And, as exporting companies reached their capacity limits, we expected to see business investment increase. Stronger exports and investment would complement household spending, and growth would become more broadly-based and self-sustaining.

Certainly, adjustment in the energy sector has been painful. Beyond cuts to investment spending, oil companies restructured operations and laid off workers. Employment in the resource sector fell by roughly 50,000 jobs from the beginning of 2015 to the middle of last year. Despite this, companies boosted production and exports of crude oil as earlier investments were completed and as they found greater efficiencies. And, since oil is priced in US dollars, the decline of the Canadian dollar also helped cushion the impact of the shock. The increased output and weaker currency helped to offset almost half of the $60 billion decline in revenue from oil shipments, boosting exports by about $25 billion.

That said, Canada's other exports took longer to recover than we anticipated. Exporting companies had taken a significant hit both during and after the global financial crisis. Many disappeared, to be replaced over time by new firms exporting new goods and services. As a consequence, the composition of Canada's exports has also changed since the crisis.

Exports of services in categories such as technical, travel, financial and management services, have taken the lead, while some traditional goods, such as motor vehicles and parts, have seen their shares decline. By mid-2016, non-energy exports had fully recouped their previous drop, and today, total exports are almost 10 per cent above their pre-crisis peak.

Monetary policy has played a key role in this adjustment. We estimate that if we had not lowered our policy rate in 2015, the economy would be roughly 2 per cent smaller today-a difference of almost $50 billion-and there would be about 120,000 fewer jobs. Government fiscal stimulus measures also contributed importantly to growth, and this has meant a better mix of monetary and fiscal policy.

Without this fiscal stimulus, interest rates would have had to have been even lower than they were. All things being equal, this would have meant even more household debt and an increased longer-term vulnerability for the economy.

As we look ahead, we project that business investment will be a key driver of economic growth. Business investment has also been slower to

materialize than we expected, but it has been strong across the board over the first half of this year. Further, in our most recent BOS, our regional staff found that companies were more focused on expanding capacity than they were previously. Indeed, businesses across an increasing range of sectors say they expect sales growth to improve further, and hiring intentions have reached a record high.

Given all this evidence, we could see by the beginning of summer that the economy's adjustments to lower oil prices were essentially complete. To be clear, the impact of the shock was still visible in energy-intensive areas of the country. But this was being offset at the macro level by greater strength in other areas.

So, in July, and again earlier this month, we raised our key policy interest rate. Between those two rate hikes we saw a long string of stronger-than-expected economic data, culminating in the GDP report at the end of August that showed an annual growth rate in the second quarter of 4.5 per cent.

As we noted in our most recent interest rate announcement, this pace is unlikely to be sustained, and recent data point clearly to a moderation in the second half of the year. Still, the expansion is becoming more broadly-based and self-sustaining, and it is important to remember that it is the level of output relative to potential that drives inflation, not the growth rate.

We are in the process of developing an updated forecast for growth and inflation, and it will be published in next month's Monetary Policy Report (MPR).

Risk management

Despite the recent news about economic growth, the story of inflation in Canada over the past few years has been dominated by downside risks. Indeed, for most of the past five years, inflation has been in the bottom half of the target band. Bearing in mind the long lags between economic activity and inflation, much of this low inflation has been due to slow economic growth in the past.

More recently, it has also reflected temporary factors such as weakness in food and electricity prices. In fact, inflation has been surprisingly soft recently in much of the developed world, not just Canada. I will have more to say about this in a few minutes.

Since inflation has been so consistently in the lower half of the target band, our risk-management approach to monetary policy led us to pay greater attention to forces pushing inflation down. This is because when inflation is already low, a negative shock to the outlook for inflation has more significant policy consequences than a surprise on the upside. Throughout, we wanted to be sure our policy would be sufficiently stimulative to get the economy home.

As the expansion continues, we will continue to manage the evolving risks to the inflation outlook. The temporary factors that have been holding inflation down should dissipate in the months ahead, although recent exchange rate developments could affect this timing.

In our July projection, we forecast that inflation would reach close to 2 per cent by the middle of next year. Since that projection, the Bank's measures of core inflation have edged higher, as expected. We expect the downward pressure on inflation to shift to upward pressure as economic slack is used up. Indeed, our models forecast a very slight overshoot of our 2 per cent target in 2019-a product of our model's dynamics.

The appropriate path for interest rates in this situation is very difficult to know, because there are a number of important unknowns around the inflation outlook.

These unknowns are unusual, as they are mostly the product of the unusual nature of the situation we find ourselves in-the legacy of the global financial crisis, the protracted period of slow economic growth and extremely low interest rates, and so on. Accordingly, we need to keep updating our understanding of the economy in real time. That is why we say that the outlook for inflation, and therefore monetary policy, is particularly data dependent right now.

The meaning of data dependence

What does it mean, in practical terms, to say that monetary policy is "data dependent"? After all, central banks always depend on data to measure their economy's progress relative to expectations.

What I mean in this context is that in a period of heightened uncertainty about how the economy is evolving and the implications for inflation, we need to pay very close attention to all the information we receive, including data, sentiment indicators and intelligence, and make continuous

inferences about not just how the economy is evolving, but how its behaviour may be changing.

Let me give you four examples of the issues we will be monitoring.

The first, and most important, is the evolution of economic capacity. I said that our version of "home" is at the intersection of full capacity and 2 per cent inflation. But full capacity can be a moving target. This is because when companies increase investment, they augment their capacity to produce through some combination of raising their productivity and increasing their workforce.

This is a welcome development because, as the economy approaches full capacity, investment spending can have the effect of pushing out those capacity limits, giving the economy more room to grow in a non-inflationary way.

In short, this is something worth encouraging. To some extent, this happens at this point in every economic cycle, but the protracted cycle we have been through makes this issue particularly relevant this time around.

A second issue is the question of inflation and technology. Some economists have cited technology as contributing to the weakness in global inflation. The digital economy may be allowing goods and services to be produced and delivered more efficiently, helping to keep prices down. We may also be seeing stronger competition through e-commerce, which affects how retailers set prices.

It is worth emphasizing that this type of disinflation increases everybody's purchasing power and therefore is also a positive development. The Bank would want to estimate the impact of technological developments on trend inflation and, assuming the impact was temporary, see through it, provided that inflation expectations remained well anchored. There is a lot more work to be done to understand both the size and persistence of these effects.

A third issue is wage growth, which has been slower than would be expected in an economy that is approaching full output. Hourly wages increased at an annual pace of 1.7 per cent in the second quarter, and growth has been subdued for months, although there were signs of an increase in the latest monthly employment report.

The slow growth is likely due in part to employment shifting from higher-paying jobs in the oil sector to lower-paying jobs elsewhere. How long this effect will continue is not clear, and other phenomena may be at work. Again, we must work hard to understand the data, and the underlying shifts in behaviour they may be pointing to.

The fourth issue is elevated household debt. There is reason to think that interest rate increases may have more of an impact on the economy and inflation than they did in the past. Further, we do not yet know the full extent of the economy's reaction to various macroprudential measures aimed at imbalances in the housing market. So, the Bank will be looking closely to see how the economy's adjustment to changes in interest rates may differ from that in previous economic cycles.

This is not an exhaustive list. There are also many external risks and uncertainties around our outlook, including geopolitical developments and the rise of protectionist sentiment in some parts of the world. The evolution of the neutral rate of interest is also a topic of significant debate in the profession. We have been talking about these uncertainties for some time.

In such an environment, we simply cannot rely mechanically on economic models. This does not mean we are abandoning our models. It does mean we need to use them with plenty of judgment, informed by data, sentiment indicators and intelligence, as we go through the delicate process of bringing inflation sustainably to target.

We will continue to watch all the data closely, as well as developments in financial markets, in terms of their impact on the outlook for inflation. We recognize that the economy may act differently than in previous cycles. We will not be mechanical in our approach to monetary policy.

Let me quickly make one final point. Among the financial market developments that we watch closely are movements in longer-term interest rates and the exchange rate. Changes in interest rates naturally lead to movements in the Canadian dollar. However, currencies can move for many other reasons, including external factors, and these movements can affect our inflation outlook, depending on their cause, size and persistence.

Conclusion

It is time to conclude. I hope I have given you an appreciation of just how far the economy has come on its way home. And although we are confident

that the economy has made significant progress, we cannot be certain of exactly how far there is left to go.

The economic progress we have seen tells us that the moves we took to ease policy in 2015 were the right thing to do. At a minimum, that additional stimulus is no longer needed. But there is no predetermined path for interest rates from here.

Monetary policy will be particularly data dependent in these circumstances and, as always, we could still be surprised in either direction. We will continue to feel our way cautiously as we get closer to home, fostering economic growth and keeping our inflation target front and centre.

NIST - Updating the Keys for DNS Security

The Internet's Domain Name System (DNS) uses the DNS Security Extensions (DNSSEC) to help maintain the authenticity and integrity of its services.

DNSSEC adds digital signatures and supporting keying material to the DNS, enabling users to authenticate domains and detect attempts to spoof or modify DNS responses transmitted over the Internet.

In October 2017, the DNSSEC key for the root of the DNS will be updated (or "rolled") for the first time.

NIST's Information Technology Laboratory has been working with DNS experts from around the world to help plan and test the procedures to be used in this important DNSSEC maintenance procedure.

This article explains how DNSSEC works, describes the validation keys that are being used to improve DNS reliability, presents a timeline of the key change (or "rollover"), and explains what DNS administrators need to know if DNSSEC validation is used.

To read more:
http://ws680.nist.gov/publication/get_pdf.cfm?pub_id=924334

Cryptocurrency Market Capitalizations

A very interesting web site.

All ▾ Coins ▾ Tokens ▾ USD ▾ ← Back to Top 100

#	Name	Symbol	Market Cap	Price	Circulating Supply	Volume (24h)	% 1h	% 24h	% 7d
1	Bitcoin	BTC	$68,528,505,328	$4129.80	16,593,662	$1,567,590,000	0.55%	-1.78%	13.15%
2	Ethereum	ETH	$27,297,869,188	$287.74	94,871,233	$546,485,000	0.01%	-4.44%	9.77%
3	Ripple	XRP	$7,389,893,615	$0.192727	38,343,841,883 *	$101,915,000	0.75%	-1.57%	11.89%
4	Bitcoin Cash	BCH	$7,271,137,224	$437.38	16,624,150	$265,470,000	0.44%	-1.38%	4.98%
5	Litecoin	LTC	$2,787,720,246	$52.45	53,148,532	$212,948,000	1.19%	-4.48%	12.18%
6	Dash	DASH	$2,476,885,918	$326.49	7,586,314	$40,425,700	0.29%	-3.01%	-4.66%
7	NEM	XEM	$2,058,165,000	$0.228685	8,999,999,999 *	$4,952,980	0.24%	-4.62%	7.84%
8	IOTA	MIOTA	$1,586,058,350	$0.570621	2,779,530,283 *	$27,660,500	1.41%	5.82%	15.92%

Bitcoin Charts

You may visit:
https://coinmarketcap.com/coins/views/all/

Mergers and Acquisitions – Don't forget cyber security due diligence!

Rigzone is one of the oil and gas industry's main recruitment and networking websites.

It was founded in the US in 2000 by David W Kent, who sold the site ten years later for $51 million.

Mr Kent went on to found Oilpro which served a very similar purpose and clientele to Rigzone.

Kent used backdoors he had inserted before he sold Rigzone to gain access to company data at a later date.

Between 2013 and 2016, Kent scraped 700,000 customer accounts which were used to increase membership on the Oilpro website.

Having built Oilpro with members stolen from Rigzone, Kent then approached the owners of Rigzone to purchase Oilpro, asking them, in effect, to purchase their own data.

Following suspicions, the owners of Rigzone deployed a honeypot on their system which allowed them to identify suspicious activity and build evidence against Mr Kent.

Mr Kent was subsequently arrested, convicted and sentenced to over a year in prison for intentionally accessing a computer without authorisation.

The Oilpro website was taken offline in August 2017.

The case is a reminder to companies involved with mergers or acquisitions to undertake cyber security due diligence to ensure they understand the key security considerations required to protect their investment.

Germany's banks - the moment of truth for decision-makers

Dr Andreas Dombret, Member of the Executive Board of the Deutsche Bundesbank, at the Bain Bankers Lounge, Frankfurt am Main.

1. Introduction: structural change reaches a tipping point

Ladies and gentlemen

Banking is necessary, banks are not.

Don't worry: that's not my view, but that of Bill Gates. What this bon mot, uttered more than 20 years ago now, tells us is that structural change in the banking sector is not as new as it might seem.

In fact, it's something we are almost taking in our stride these days. For years now, there has been constant talk of upheaval and revolution, of banks dying off and structural change. But on the face of it, not much has actually happened. One could be forgiven, then, for thinking that we have more or less accepted structural change as an annoyance - even if it is a bearable one - rather like a visit from the banking supervisor.

My view where technological progress is concerned is a different one. Annoying though it may be to some, it's no good shrugging one's shoulders at it, nor is there any escaping it. The banking sector has reached a tipping point in its evolution. That is, we have reached a position where even the smallest change will unleash a wave of innovation in the banking world.

That is because technological progress always stands for upheaval, for a redirection of society's resources. Sooner or later, activities which once created significant value become automated, standard processes.

And this trend has now reached the financial sector as well. Ever more once-innovative banking operations are being standardised and performed by technology.

Ladies and gentlemen, I have a confession to make. There are some sides of structural change which I, too, struggle to come to terms with - to this day, I would much rather type on a Blackberry than swipe on an iPhone.

But in my capacity as a banking supervisor, I do wonder that if banking is possible without banks - who, then, will provide tomorrow's customers with the banking services they require?

That's not a question I can answer straight up. There are, however, five theories on the future of banking I would like to discuss with you today.

2. Reliance on net interest income needs to stop

Let's begin with the question of earnings. My first theory is this. Germany's banks and savings banks continue to be over-dependent on revenues from interest business. This is preventing them from being profitable in the long run.

Net interest income at German credit institutions has been shrinking for years now. To this day, they still haven't managed to refocus their strategies on the new normal, which is why their profitability has been ebbing away.

That was a very clear message from our low-interest-rate survey, which we released three weeks ago in conjunction with the Federal Financial Supervisory Authority, BaFin.

Our findings show that small and medium-sized German credit institutions are expecting their profits to continue shrinking between 2016 and 2021, according to their planning. They are also projecting a remarkable 16% drop in their return on total capital.

Monetary policymakers are a popular scapegoat for this malaise - it is their low policy rates, some say, which have caused earnings to dry up in the banking sector.

But that, I feel, would be oversimplifying things. If the ECB Governing Council considers an accommodative monetary policy stance to be appropriate, it also needs to set interest rate levels accordingly.

Monetary policymakers are, after all, responsible for the entire euro-area economy. Seen through that prism, banking sector profitability is just one aspect, albeit an important one.

As understandable as the criticism directed at interest rate policy may seem from the perspective of German credit institutions, there's a risk they might overlook the bigger economic picture.

I say that partly for historical reasons. Interest rate levels in Germany have generally been on the wane for more than 30 years now, notably on account of demographic and macroeconomic factors.

Unsurprisingly, then, the German banking sector's interest margin has been steadily narrowing for more than 30 years as well.

Hence, accommodative monetary policy is just one - albeit important - aspect. That said, interest-driven business models have been under pressure for quite some time already.

And yet we are seeing very little in the way of adjustment. The business models of small and medium-sized German institutions, in particular, tend to be more reliant on interest business than those of their international peers, despite the fact that some of them can generate sufficient profits even in this challenging setting.

My conclusion, then, is this. Excessively interest-heavy business models are particularly exposed to structural change. It is becoming increasingly important to tap new sources of income.

3. Flight into risk isn't the answer

One simple escape route out of this malaise, it would appear, is a flight into risk - the search for yield is what I'm talking about here. My second theory, then, is this. Banks and savings banks would be unwise to escape from structural change by fleeing into risk.

And the longer the low-interest-rate environment persists, the greater the risk of institutions taking on excessive risk. After years of de-risking, we are now seeing the first signs in Germany of a growing willingness to assume risk.

Prices in financial markets are leaping from one all-time high to the next - the only thing is, volatility is conspicuously low, despite the absence of a consistently robust economic and political backdrop.

What's the story for banks and savings banks? Interest rate risk remains at an elevated level. In real estate business, there are budding signs that institutions are softening their credit standards.

Our low-interest-rate survey likewise points to an increase in risk propensity. One-third of small and medium-sized German credit institutions are planning to increase their business volume and risk taking. However, they do not wish to increase their capital to the same extent - in the medium term, that will erode their resilience.

As we all know, one swallow does not make a summer. Not just that, taking on more risk, in and of itself, isn't a problem, not yet at least - after all, managing risk is the raison d'être of credit institutions. I am still at ease right now, because the stress tests we conducted as part of the low-interest-rate survey show that more than 95% of banks would satisfy the broadly based capital requirements even in crisis scenarios.

And yet caution is warranted on two counts. For one thing, banks and savings banks need to meticulously check whether they have tabs on the effects of the risks in their portfolios and can handle them when a crisis strikes. For another, taking on more risk - be it through portfolio shifts or extending the balance sheet - does nothing to resolve structural issues. At best, it will provide short-lived respite from earnings problems.

4. Credit institutions need to be open-minded to new forms of value creation

And that brings me to my third theory. If banks and savings banks are to fix their earnings problems once and for all, they will need to tap new sources of income and be open-minded to new forms of value creation. And I dare say that simply hiking the prices for existing services won't go far enough. Especially if competitors don't follow suit.

I have little time for overblown forecasts predicting that banks and savings banks will all be replaced by fintechs in the future. Hugely successful though Amazon has been, town centres are still abuzz with shoppers. As ubiquitous as smartphones are nowadays, people continue to send letters - but mail firms need to evolve to make up for the downturn in postal business, for example, by delivering parcels sent by online mail order companies.

I firmly believe that credit institutions will continue to exist in the future - but only the ones which are willing and in a position to embrace change.

No-one can say for sure what banking business will look like some years hence. Institutions can counter this uncertainty by exploring what it is that customers - both legacy and new ones - actually want; and also by harnessing the digital expertise of fintechs instead of regarding them as some kind of nemesis.

Take a look at customers and you'll see that, millennials notwithstanding, there is more than one type of customer out there. Plenty of people still prefer to bank via traditional channels. It's just that their share will continue to dwindle - making structural change an increasingly pressing topic for institutions.

I would also recommend harnessing the benefits of swarm intelligence. Open banking systems - arrangements where banks open up their data to trusted fintech partners which then provide apps for bank customers - are increasingly catching on, meaning that there is scope for new fee models and for boosting customer satisfaction.

Open banking systems do have their risks, though - in this case, cyber risks. I am pleased to note that our low-interest-rate survey shows that institutions are planning to step up investment in this field - but at present many of them are still vulnerable.

This is a hugely important topic to me because I feel it is still being neglected. We intend to increasingly probe the extent to which credit institutions can handle cyber attacks.

Yet at the same time, supervisors are keen to take account of the competitive environment. The Single Supervisory Mechanism, of which we are a member, today released a consultation on guides concerning the assessment of licence applications - and this explicitly also addresses the question of fintech credit institution licence applications. I urge banks and fintechs to use the consultation phase constructively.

5. Banks and savings banks must become more efficient

I come now to the cost side and to the challenge of compensating for declining income through greater efficiency.

This brings me to my fourth theory: German credit institutions could provide their services more efficiently. Once again, I would draw your attention to the low-interest-rate survey, whose findings suggest that small and medium-sized German institutions are expecting their cost-income

ratio to increase. Unfortunately, this puts German credit institutions at the bottom of the European league.

If the cost-income ratio remains poor because of a failure to significantly bring down administrative costs, then more has to be done.

An optimist would therefore hope that the only reason why the numbers remain unsatisfactory is that the banks and savings banks are busy investing in things such as new IT infrastructure, better risk management systems and more efficient processes. I fully support those institutions which are doing just that, but I have to say that there are still many institutions which are not.

And I am talking here about all three pillars of the German banking system, although perhaps not to the same extent in each case. We point out these differences in our conversations with the sector associations, and I hope that what we tell them sinks in, because differences can definitely be a sign that more has to be done in some quarters than in others.

Banks and savings banks will have to become even more efficient, and they will have to do so in a new, tougher regulatory environment. What I am getting at here is that the regulatory framework cannot be loosened so as to allow inefficient institutions to kick structural change into the long grass.

I readily admit that credit institutions incur costs because of regulation and oversight. But a bank or savings bank which cannot survive in an effective regulatory and supervisory environment needs to urgently rethink its business model.

It goes without saying that adapting to the new regulatory requirements is a mammoth task, and the uncertainty surrounding the regulatory reforms which have yet to be put in place is clearly a problem. What will Basel III bring with it, and what will it mean for banks in the EU?

This is why we are making every effort to complete Basel III without creating excessive burdens. Once that has been done, Basel III should, as far as possible, be implemented in a way that is committed to the Basel rules.

But there is one thing we must ensure: namely, that we remain true to the original intention of the Basel Accords: to provide global rules for global credit institutions. For all the others, I would like to see appropriately gradated rules. This is something which we can achieve by means of the

CRR and CRD: by applying smart threshold values, below which simplified rules apply, and by putting in place a separate oversight regime for the smaller institutions, what is referred to as the "Small Banking Box", which we are currently lobbying for in Brussels.

6. Not even mergers shield institutions from structural change

Ladies and gentlemen, regulation must not and never will be an instrument of structural policy. That is something which the market players need to decide among themselves.

And this brings me to my final theory, which is that mergers and takeovers will not make banks and savings banks immune to structural change.

Many commentators believe that fierce competition in the German banking sector1 makes further consolidation inevitable, and I for one share that view.

The forms which consolidation takes will be determined by customer behaviour and the banks' response to that behaviour.

Capacity reduction by existing institutions is likely to play a major part in this.

The specific question which we have to ask is therefore, will there be more mergers and, if so, can they alleviate the problems associated with structural change?

Again, our low-interest-rate survey provides some interesting insights: about one in every nine of the nearly 1,600 institutions which took part in the survey are already in the process of merging with another institution or have specific plans to do so.

And a similar number of institutions think it a plausible proposition that they could be taken over as part of a merger in the next five years.

But I wish to warn against unrealistic expectations: there are numerous examples of mergers which have failed.

This is because, for a merger to succeed, a number of important conditions have to be fulfilled.

For example, there have to be sustainable synergies in the business models or in regional coverage.

There is no exhaustive list of factors which determine success, nor is there a blueprint for success.

German institutions must therefore perform a comprehensive health check in order to detect avoidable problems at an early stage.

Even where mergers are successful, however, new opportunities for value creation do not come about automatically, and customer needs are not automatically better served.

7. Conclusions

Ladies and gentlemen, an animal that tries to resist evolutionary change because it is not congenial risks becoming another animal's dinner.

Similarly, technological progress changes value creation in the banking sector. There is no escaping this simple truth. Adapt or die.

It is undeniable that monetary policy and regulation are currently having major side effects on the banking sector, but we cannot allow these side effects to blind us to the uncomfortable fact that it is precisely the new, creative and innovative forces that are destroying existing structures in the banking sector.

Every bank and every savings bank must ask itself if it wants to be part of the creative force, part of the new structures, or part of a ruined structure. I dare to suggest that most of you wish to belong to the first group.

Do you believe that it is possible without taking courageous decisions? Without risky decisions? Or without unpopular decisions? I do not.

Creative decisions presuppose creative questions: questions which show the world in a new light.

In Germany's banking landscape, the questions which are being asked are all too often framed in a decades-old mould of thinking. So, to misquote title of a song by German singer Ina Deter, perhaps the country needs new bankers?

Essentially, it does, because you will not be able to lead your institutions to a new era with the old thinking. Banks are becoming service providers with banking licences; account holders and bank customers are becoming "users" who require a broad spectrum of flexible financial services.

So, yes, a new world needs new bankers, or at least experienced bankers who have the courage to take innovative decisions.

My challenge to the sector is therefore to perform a mental demolition of established institutions wherever necessary and to rebuild them on green-field sites. Today's banks will only be successful tomorrow if they have enough new bankers, or take new decisions.

I will be pleased to take your questions and hear your comments.

Ten years on - lessons from Northern Rock

Sir Jon Cunliffe, Deputy Governor for Financial Stability of the Bank of England, at the Single Resolution Board Annual Conference, Brussels, 29 September 2017.

This month marks the 10th anniversary of the failure of Northern Rock.

The failure of a middle size British mortgage bank was followed by the collapse of much bigger and globally systemic banks. But the picture of the queues forming outside the branches of Northern Rock remains for many the picture of the start of the financial crisis.

Prior to September 2007, I knew of the existence of bank runs from economic history books, the experience of developing and emerging economies and the film of Mary Poppins.

Seeing one happen in London brought home that it is never different "this time". The fundamental basis of the financial system is trust. And trust, if not properly managed and protected, can disappear instantaneously.

And once that happened, the UK had no effective way of managing the failure of a bank. And no way to avoid the taxpayer having to step in to stop such a failure leading to the loss of critical services to the economy and contagion to other banks.

Anniversaries, even those of difficult events, offer a chance to step back and reflect – to ask whether we have learned the lessons of Northern Rock and the bank failures that followed?

I want today to look at why we were unable safely to wind up a failing bank without taxpayer intervention, at the progress we have made in the UK towards rectifying those failings, and at some of the challenges that remain.

The pre-crisis regime

The failure of Northern Rock in 2007 and later, of RBS and Lloyds exposed brutally that the UK lacked the tools needed to manage the failure of a bank.

Depositors were expected to take comfort from a depositor compensation scheme based on the principle of 'co-insurance'.

They were fully covered only for the first £2,000 of their deposit. Any depositor with more had a strong financial incentive to run on hearing rumours that the bank was failing – which is what they did on hearing that Northern Rock was in receipt of emergency liquidity assistance from the Bank of England.

When that happened, there was no public authority formally and clearly responsible for dealing with failing banks and with the powers to match.

The UK relied wholly on its standard corporate insolvency regime to handle the fall-out from a bankrupt bank.

This required an insolvency practitioner to protect the interests of creditors as a whole. The public authorities had no means of directing the insolvency process to prioritise the protection of depositors, the continuation of the bank's critical functions or wider financial stability concerns.

There was no way to recapitalise a failing bank by bailing in its creditors. As a result, when faced with the failure of a bank of any size, the UK authorities had only a stark choice between a very disruptive insolvency, putting financial stability at risk, or a taxpayer bailout.

The UK was not of course the only jurisdiction to discover in the financial crisis that it did not have an effective regime for dealing with the failure of banks.

And, as we discovered when Lehman Brothers failed, the authorities in different jurisdictions had no preagreed means of coordinating with each other on how to deal with the sudden failure of a major cross-border bank. Nor had they any confidence that the actions taken by authorities in another jurisdiction would align to their own national interest.

With hindsight it is clear we had been lulled into a false sense of security. In Britain, Northern Rock represented the first major run on a bank since the failure of Overend Gurney in 1866.

Unlike, for example, the US, the UK had not experienced bank runs in the 20th century.

Banks in the UK had failed. But insolvency had generally been avoided by the Bank of England twisting arms to 'encourage' other banks, to support a rescue 'lifeboat', as in the secondary banking crisis of 1973 or to take over the failing bank as with Barings in 1995.

The failure of BCCI in 1991 did lead to a protracted and difficult insolvency. But the bank's activities in the UK were not of a scale that posed risks to the UK financial system and economy The Bank of England's approach to bank failure, an approach shared by many central banks, was one of 'constructive ambiguity'.

The aim was to guard against moral hazard by maintaining uncertainty about whether a bank in trouble would get liquidity support with the threat of insolvency in the background. In the event the threat of insolvency proved neither credible nor effective.

When Northern Rock got into trouble with £23bn in customer deposits and a balance sheet of £100bn, the UK financial authorities were left with no way of rapidly transferring parts of the failed bank's business to another bank; or of recapitalising the bank by imposing losses on shareholders and creditors without serious risks to financial stability.

And so, on 17 September 2007, the Chancellor was compelled to guarantee all Northern Rock deposits.

Subsequently the bank was nationalised to avoid insolvency and to allow the bank's critical functions to continue while a buyer was found for its deposits.

The lessons of Northern Rock were dramatically underscored a year later by the failure of RBS and Lloyds.

Faced again with the choice of insolvency or taxpayer intervention, the government was forced to inject £37bn into the two banks. The banks were not put into insolvency and it proved impossible fully to write down the existing shareholders or impose losses on the bond holders.

The first lesson from this was that constructive ambiguity simply didn't work. The market had always suspected this to be the case. The implicit subsidy enjoyed by the largest banks before the crisis illustrated the market's assumption that the state would always intervene to prevent their bankruptcy. And the market was generally proved right.

The exception that proved the rule was the Fed's decision to let Lehman Brothers enter insolvency. The fallout globally from Lehmans demonstrated dramatically, why, for large banks that perform critical functions, insolvency is not a viable option.

The second lesson, which follows from the first, was that if we want, when a bank fails, to have better options than a disruptive insolvency or a taxpayer bailout, those options have to be put in place well beforehand.

Doing so comes at a cost to banks and to public authorities.

But if at the point of failure, there are no better options than were available in 2008, moral hazard cannot be avoided.

Rather than constructive ambiguity, we need credible clarity that when a bank gets into trouble, the losses will be made to fall on shareholders and creditors and not the taxpayer.

And if the bank provides critical services to the economy, that these can continue while the bank is resolved in an orderly way.

The Purple Book

It is in order to achieve such credible clarity, that next week the Bank will publish an update of its approach to resolution. This document – known by the colour of its cover as the Purple Book - was first published in October 2014. Its purpose is to set out very clearly the options that the Bank has to deal with a failure of a bank and the way in which we would use our powers.

Explaining how resolution is designed to work in practice and what is needed to remove barriers to resolvability are necessary steps to ensure that resolution regimes are credible.

The Purple Book illustrates the scale of progress that has been made in the UK towards putting in place a credible and effective way of dealing with bank failures. I would pick out three crucial areas of reform:

First, there is now a comprehensive statutory framework to deal with failing banks, for which the Bank of England is formally responsible. We have statutory powers to match this responsibility and there are a wide range of options available to us.

Unlike in 2008, there, is now a special bank insolvency procedure which requires that the insolvency practitioner prioritise pay-out of insured depositors or the speedy transfer of these deposits to a purchaser.

Eligible depositors are protected up to £85,000. 'Co-insurance' has been consigned to history.

For the large number of small building societies and banks, this procedure should mean that their failure can be managed and their depositors paid out or transferred quickly following entry into insolvency – leaving shareholders and creditors to take the losses.

But the larger banks that hold the majority of deposits in the UK provide critical functions for the economy.

These would be disrupted by insolvency, even in the new regime. Were a large bank to fail, the Bank of England can now trigger the use of 'stabilisation' powers outside insolvency.

These powers include 'bail-in' to recapitalise the bank by imposing losses on shareholders and creditors, so that its critical operations can continue. This provides time for the firm to be safely restructured to address the causes of failure.

Second, we are well on the way to ensuring that if a bank fails and is taken into resolution, there will be sufficient, private sector, financial resources, in the form of debt and equity, that can be bailed in to absorb losses and recapitalise the bank so that it can continue to operate.

To achieve this the Bank has set every UK bank (and building society) a requirement for the minimum amount of such loss absorbing resources – known as MREL – it needs to hold. This requirement will need to be met in full by 2022. MREL covers both the capital a bank holds in going concern and the capital and debt that can be bailed in if it fails and enters resolution.

The biggest UK banks already have going and gone concern resources sufficient to absorb losses of almost a quarter of their risk-weighted assets, and are well on their way towards meeting their full MREL requirements. Current levels of loss absorbing resources mean that even if the major UK banks saw losses six times the losses they incurred over 2008 and 2009, there would be sufficient private sector resources that could be bailed in to recapitalise the bank and stabilise it without taxpayer support.

And next week, alongside the Purple Book, we will publish for consultation the Bank of England's proposals on how these loss absorbing resources should be distributed within banking groups.

In setting the timetable for meeting full MREL requirements, the Bank has considered the balance of costs and benefits. Issuing MREL imposes costs on banks. These costs will be minimized if banks are able to build up their MREL loss absorbing debt to replace their existing debt as it matures.

It could be counterproductive if, in seeking to impose requirements intended to address financial stability, we did so on a timetable that dislocated the banking system and made it more not less vulnerable during the process.

Third, statutory powers and loss absorbing resources are necessary but not sufficient conditions for an effective resolution regime. There are other barriers to resolution that also need to be addressed.

Resolution must provide continuity, whether continuity of access to financial market infrastructure, continuity of contracts or operational continuity.

For example, services such as IT that underpin critical functions will need to be set up in a way that enable them to continue in resolution. The Bank is working alongside the PRA in assessing firms' readiness to meet operational continuity in resolution.

We should however have no illusions about the resolution of a major bank. If it happens, even when the regime is fully in place, it will be a very painful exercise. Resolution is not a magic wand; losses will need to fall on creditors. Even if we are prepared in advance, stabilising a large failing bank will not be easy.

But taken together, these reforms mean that we would be able to handle a failing bank very differently today compared to 2008.

There are in place now credible options, other than insolvency or bailout, that ensure that bank shareholders and creditors will bear losses if a bank fails.

And we are much better able now than we were to ensure that a failing bank can if necessary be stabilized so it can continue to provide critical services to the economy.

What remains to be done?

However more remains to be done.

First and foremost, we need to implement fully the reforms I have mentioned. Banks need to continue to build up the necessary loss absorbency and to restructure as necessary to ensure operational continuity in resolution.

This is perhaps an obvious point, but one that needs repeating. It is 10 years since Northern Rock failed and memories may be beginning to fade.

Ensuring that we have a better option than insolvency or a bailout, is not costless. And, as that cost becomes apparent in a number of jurisdictions, there are increasingly voices calling for the reforms to be watered down or abandoned. It is argued that they are too expensive for banks, especially small banks, to implement and will restrict lending to the real economy.

On the cost, I would emphasise the cost not only to the taxpayer but to the economy as a whole of disruptive bank failure. In the UK, the going concern capital regime is based on assurance of there being an effective way to resolve failing banks. Absent such assurance, if this risk of disruptive bank failure remained as in 2008, we would require banks to hold appreciably more capital to absorb losses.

In the UK, the Independent Commission on Banking suggested a capital surcharge of 3% of risk-weighted assets (RWA) for banks that could not be resolved. In its 2015 assessment of capital adequacy, the Financial Policy Committee estimated that capital would need to be around five percentage points higher if there was no resolution regime in place.

It is also argued that resolution will not work; that while it may be a way of dealing with idiosyncratic failures, in a systemic crisis authorities will be reluctant to bail in shareholders and bank creditors.

This binary distinction between idiosyncratic failure and fully blown systemic crisis seems to me oversimplistic.

For sure, if we were suddenly to find ourselves pitched back into the middle of a systemic crisis, with a number of major institutions having failed or on the point of failure and a complete breakdown of trust and confidence, orderly resolution of individual banks in itself is unlikely to be able to stabilise the system as a whole.

But we did not suddenly arrive in late 2008 in the midst of full blown financial crisis. Had the authorities had better, less disruptive options available over the previous 18 months to deal with a series of failing institutions, the disruptive, explosive nature of the crisis might well have been minimised.

There would still have been very major losses and failures. But we would, in my view, have had a much better chance of a more orderly, less damaging correction of an overleveraged banking system.

And it is also probable that the buildup of leverage and bad debt itself would have been significantly restrained in the years before the crisis by the discipline imposed by shareholders and bondholders aware that they stood first in line to bear losses if the banks failed.

We not only have to follow through domestically. There is further work to do to ensure that we can not only manage the failure of a bank large enough to be systemically significant in one jurisdiction, but that we can manage the failure of large, internationally active banks.

Again, if we want better options than bailout or insolvency, we need to continue working now, internationally, to put those options in place.

This of course requires trust and cooperation between the home authority for the group and the host authorities of the jurisdictions in which it has major operations. But trust and cooperation, while necessary conditions, are not in themselves sufficient.

Home and host authorities needs to agree, in advance, on the resolution strategy for a major cross border banking group. Hosts need to be confident that the chosen strategy is viable and that it will respect their own financial stability needs.

In other words, confidence that local operations will not be cut loose in resolution and that, if necessary, hosts have the ability to draw down loss absorbing resources through the parent.

We have made very significant progress in agreeing international standards on resolution. And we have established crisis management groups, and, in the EU, resolution colleges, that bring together the regional supervisors for the major cross border banks.

These provide the mechanism for agreeing, in advance, the strategy for managing the failure of a major bank with a presence in a number of jurisdictions and for monitoring progress in making that strategy possible.

This requires the continued build up, in line with the agreed international standard, of loss absorbing resources that can be used to recapitalise the group in resolution. And hosts' confidence in the resolution strategy will depend on the contractually enforceable allocation of those resources across the groups major operating entities, again in line with international standards.

Recapitalising a bank in resolution by bailing in the private sector restores solvency. But a solvent bank in resolution will still have liquidity needs. Our first preference – and that of the resolved firm – would be for the bank to meet those needs from some combination of its own liquid assets and private funding sources.

But we cannot guarantee resolved firms will be in this position, even once they have been restored to solvency and are continuing to meet the requirements for authorisation.

Ensuring solvent firms in resolution have access to public sources of liquidity is therefore a critical part of an effective resolution strategy and an area where there is great merit in clarity.

The clearer it is to the bank's creditors, counterparties and financial market infrastructure firms that a resolution comes with the expectation of access to public liquidity, if needed, the smaller the amount that may end up needing to be drawn-down.

In contrast, doubts over whether and how liquidity will be made available to a bank upon its entry into resolution risk undermining a resolution, and leaving the authorities with a potentially far bigger problem.

So it is important to ensure resolution and liquidity strategies are aligned - whether they are delivered by a single institution, as in the UK, or by separate ones.

The Purple Book, to be published next week will set out the Bank of England's approach to providing a liquidity backstop in resolution, where required.

To be eligible, a bank will need to be restored to solvency by the bail in of shareholders and debt holders.

It will need to meet the PRA's authorisation conditions, including capital requirements, so that it can continue to operate while in resolution.

Solvent but illiquid banks in such a situation would have access to the Bank's published facilities subject to meeting the necessary eligibility criteria.

To supplement those arrangements, the Bank also has put in place a new, flexible Resolution Liquidity Framework providing the tools to lend to banks which are in a Bank of England led resolution.

Such liquidity may be secured against a wide range of collateral, building on the collateral eligible in Sterling Monetary Framework operations.

The Bank's objective would be to provide liquidity in sterling or foreign currency as required, in the necessary scale and for a sufficient period of time to allow the firm to make the transition to market-based funding.

The terms would be set in a way designed to support the effectiveness of the resolution regime, incentivise the transition of the firm back to market-based funding, and protect public money.

Confidence in the regime for the resolution of international banks is of crucial importance to the UK. We are home to a number of major international banking groups.

But equally, if not more important, we are host to a very large number of foreign banks, many of which have sizeable wholesale market operations in the UK. As the leading international financial centre, we import considerable risks from other jurisdictions.

It is therefore crucial to financial stability in the UK that we can rely on foreign banks operating in our jurisdiction having viable resolution strategies in line with international standards. Absent such assurance, we would need to ensure the entities operating here have greater resilience locally.

Non bank resolution

It was the failure of systemic banks in the crisis that exposed the lack of an effective resolution regime. But the lesson that if you want better options to deal with a failing financial institution they need to be put in place beforehand applies more widely than banks.

So we need also to think about whether resolution is necessary in other parts of the financial sector, particularly systemically important insurance companies and CCPs. These did not fail in the last crisis. But they may pose similar problems in a future episode of stress.

Insurance companies are very different animals to banks. Insurer failure is more likely to be in much slower motion and solvent run-off may present a credible solution.

However we need to think carefully about whether we can rely wholly on that and what, if any, systemic risks could arise from insolvency of a major insurance company.

Given the relatively small amount of debt in insurance companies relative to policy liabilities, who should bear the losses in resolution? And what tools are needed to allocate them?

The answers to these questions are not yet fully apparent, though in my view, the case is probably made for a resolution regime for insurers, if only as a precaution should it turn out that run-off is not enough.

CCPs

CCPs are also very different to banks. They exist to manage and reduce the risks faced by their members – to ensure financial contracts are reliably and transparently margined and collateralised.

The main prudential risks CCPs face is from the failure and consequently inability of clearing members to meet their obligations to the CCP.

The steps that have been taken since the financial crisis to increase the resilience and resolvability of their bank clearing members are therefore a key protection for CCPs. But CCPs also need the backstop of a credible resolution regime.

The principal challenge here is not solvency per se but rather the ability of a CCP to restore itself to a matched book if members default, and to do so in a way that does not undermine the stability of the system.

CCP rule books provide for very substantial mutualised resources and a comprehensive series of recovery actions. These include, as a last resort, the cancellation or 'tear up' of contracts and the end of the clearing service.

However, waiting until the mutualised resources of a CCP are exhausted and subjecting participants to the unpredictability of a full tear-up may well pose unacceptable risks to financial stability.

Resolution allows the resolution authority to intervene, if necessary, to tear-up a subset of contracts earlier in the process than would be possible in CCP recovery, and before the mutualised resources in the CCP have run out.

The losses can then be spread across the membership in the order set out in the rule-book. This is key to allowing clearing members to measure and manage their exposures at a time of stress.

It is therefore important that if the resolution authority intervenes it avoids disturbing the order of losses in the rule-book.

This requires a robust 'No Creditor Worse Off' (NCWO) safeguard which takes as its counter-factual the loss allocation rules in the CCP's rule book.

The issue of NCWO protection is the subject of current debate in the draft EU regulation on CCP Recovery and Resolution.

One school of thought is that it is essential to have a weaker NCWO safeguard so that resolution authorities have flexibility to deviate from the way in which losses would fall under a CCP's rules.

This degree of flexibility puts particular focus on the objectives by which home authorities would exercise this discretion.
Resolution aims principally to deliver financial stability. But in the case of a global CCP, whose financial stability will be given prominence?

This uncertainty may leave participants located outside of the home jurisdiction fearing that they will be exposed to disproportionately greater losses in order to protect the home jurisdiction's financial stability.

The UK does not support that approach. As with banks, it is entirely possible to establish resolution frameworks for CCPs that ensure that interests are mutually aligned and that do not permit or require the home authorities to protect national financial stability at the expense of participants outside of that jurisdiction.

The conduct of CCPs depends on clarity and certainty. A regime that does not provide the same certainty as that set out in CCP rules runs the risk of undermining the very reasons why international leaders have placed CCPs at the heart of the response to the financial crisis.

Conclusion

To conclude. Anniversaries are not always milestones to celebrate – and the anniversary of the failure of Northern Rock is a case in point.

But even where the lessons of the past were painful, their anniversary provide a chance to step back and consider whether they have been learned.

The lessons of the crisis, of course, go much wider than resolution.

The first defence against bank failure is to ensure that banks are properly capitalised to withstand losses and continue to serve the real economy.

A vast amount of work has been done over the past 10 years to put in place capital and liquidity standards and stress testing regimes to ensure a much safer and stronger banking system.

Resolution should be seen as an integral part of making the financial system safer and stronger.

Credible resolution regimes that impose losses on shareholders and investors, rather than taxpayers, when things go wrong will incentivise banks to manage their risks properly.

And regimes that enable systemic banks to be stabilised if they fail, so that they can be resolved in an orderly way without disrupting critical economic functions will reduce the cost of such failures to the real economy.

There is still significant work to do to implement fully the resolution regime, domestically and internationally. And resolving a failing bank will never be a simple or pain free exercise.

But, as the Purple Book and recent experiences in a number of jurisdictions show, we increasingly have available to us options that we did not have 10 years ago.

Non-performing loans - the Irish perspective on a European problem

Ed Sibley, Deputy Governor of the Central Bank of Ireland, at the second annual conference of the ESRB, Frankfurt am Main.

Introduction

Good morning. It is a pleasure to be invited to speak at the second annual ESRB conference.

As the Chair and previous panellists have noted, non-performing loans (NPLs) have many dimensions. They affect the credit supply channel, impact on banks' financing costs, bring uncertainty to banks' capital position, and block-up capital that could otherwise be used for more economically and socially useful activities. They also cause considerable distress for borrowers.

In short, they can cause serious dysfunction for the banking system and hence its ability to serve the economy and its customers.

For me, as a member of the Single Supervisory Mechanism (SSM) Supervisory Board, NPLs clearly remain one of the central challenges facing the European banking sector today.

NPLs go to the heart of banking - both its simplicity and its complexity. Because credit, like banking more generally, ultimately requires trust. High levels of NPLs can erode that trust and confidence in the banking system.

In my remarks today, I would first like to reflect on this issue of trust. I will then elaborate on the Irish experience, pointing to some of the measures and solutions we took regarding NPLs. Finally, I would like to draw on some of the key lessons from the Irish experience, which are relevant to the broader trajectory for Europe going forward.

Trust and NPLs

Both maturity transformation and credit intermediation ultimately rely on trust.

At its simplest, depositors need to trust that when they put their money into a bank they have certainty of being able to withdraw that money in the future. Similarly, banks need to trust that when they gather these deposits, and lend at longer maturities, they will either be repaid, or in extremis be able to enforce collateral. This requires trust in the legal, judicial or extra-judicial processes.

However, we have all seen how trust can evaporate very quickly in times of crises. And, as Francis Fukuyama notes, "widespread distrust in a society-.. imposes a kind of tax on all forms of economic activity".

While trust and confidence may be considered intangibles, the quantitative impacts are demonstrated through hard numbers. For example, investor mistrust will be reflected in lower price to book ratios; banks' mistrust will be reflected in elevated interest rates to compensate for higher risk; potential new entrants and consolidators mistrust will be reflected in the reduced likelihood of entering markets with higher NPLs, and so on.

Authorities, including supervisors, therefore have a critical role in ensuring trust within the system.

The SSM is close to three years in operation. It is still a relatively new institution. Much has been done to establish its reputation as an effective, intrusive, and independent supervisor.

This trust is hard-earned and easily lost. By taking the necessary decisions, by doing the right things we will continue to earn the trust of the European public and market participants. And this includes taking firm action in relation to NPLs.

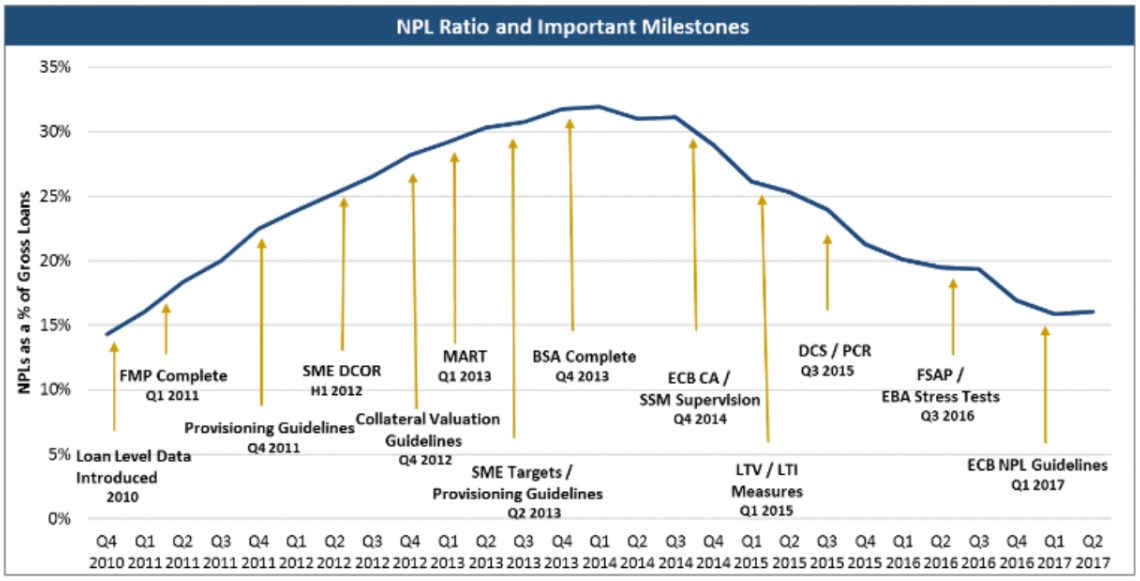
But it is not easy. We must consider financial stability issues, and perhaps less obviously for some prudential supervisors - but crucially nonetheless - consumer protection matters. Prudential supervision and consumer protection are inherently interlinked and mutually self-reinforcing. Poor outcomes for consumers are poor outcomes for the banking system. Although the ECB does not have an explicit mandate for consumer protection, many National Competent Authorities - such as the Central Bank of Ireland - do. Even were that not the case, it is important that

intrusive prudential supervision should not come at the cost of the consumer.

And this is particularly relevant for action on NPLs, which by its very nature relate to dealing with distressed borrowers - that may, for example, be at risk of losing their family home, or small enterprises that are providing local employment.

Indeed, ensuring that borrowers are protected remains at the heart of the Central Bank of Ireland's approach to NPLs. This is a fundamental aim in its own right, but it is also important in rebuilding trust in the Irish financial system more broadly following the crisis.

I am cognisant that there is much more to be done in this regard, and the remaining high level of NPLs is a significant drag on rebuilding this trust across the system.



Source: Central Bank of Ireland regulatory returns. At Q3 2014 the EBA's harmonised definition of non-performing was introduced. Prior to this date, an internal definition was used equivalent to impaired loans and/or arrears > 90 days.

The Irish experience with NPLs

This brings me to our own experience in Ireland.

The Irish banking sector has been transformed since the start of the crisis. Intensive supervisory focus and pressure coupled with improved economic circumstances continue to drive reductions in NPLs.
Nevertheless, NPLs levels remain elevated and their sustainable resolution remains a key supervisory priority.

This chart helps to illustrate this story, and the increasingly intrusive actions that have been taken to drive NPL reduction.

Prior to the crash Irish bank balance sheets expanded considerably, with domestic Irish banks more than tripling their size.4 This increase was heavily driven by property related exposures facilitated by weak lending standards and practices (e.g. high LTVs) and ultimately unsustainable business models.

The economic downturn and bursting of the property bubble resulted in large bank losses (the six largest banks lost approximately €67.8bn between 2008 and 2012).

The National Asset Management Agency (NAMA) was established in December 2009 as one of a number of initiatives taken by the Irish authorities to address the serious problems in the banking sector. The Agency acquired the largest commercial real estate and connected exposures held by the Irish banks, with a nominal value of €74bn.

The objective was to deal with the largest and most problematic loans in the banking system and to, subsequently, obtain the best achievable financial return for the State on this portfolio over an expected lifetime of up to ten years.

Interestingly though, as the chart above shows, NPLs - amounting to €85.3bn - only peaked in Ireland in Q4 2013, with an NPL ratio of 31.8%, more than two years after loans were transferred to NAMA.

So, although NAMA was clearly a critical part of the solution to dealing with the banking crisis in Ireland - particularly with respect to the larger commercial real estate loans - it was by no means the silver bullet some people may think for resolving Irish NPLs overall, as SME and mortgage loans remained a serious and growing problem.

Of critical importance during 2010 and 2011 was ensuring that the banks were adequately capitalised, impairments were recognised, and adequately

provided for. The work involved an assessment of asset quality, and stress testing the banks' balance sheets.

An important milestone was the work conducted by the Central Bank of Ireland during the Financial Measures Programme (FMP). Under the FMP, a balance sheet assessment and stress test exercise was completed in 2011 and resulted in a total capitalisation requirement of €24bn for the going-concern banks.

Following the recapitalisation in 2011, which we must not forget was at a catastrophic cost to the Irish taxpayer, our supervisory focus turned to banks' NPL resolution strategies and capabilities. They were wholly inadequate.

The Irish banks remained too slow to recognise the problem and in many cases were still reluctant to deal with it. Furthermore, they did not have credible strategies, nor the operational capability to resolve it.

Indeed, there are short-term incentives for individual banks and management to try and avoid resolving large scale NPLs, in the hope that economic recovery will deal with the problem.

But evidence shows that while this reluctance may be understandable at an individual bank level, the macro impact of not dealing with NPLs is highly problematic for the system as a whole.

The Central Bank of Ireland therefore became more prescriptive and expectations were clearly set out to the banks, including: segment specific strategies, detailed implementation plans, and enhanced board ownership.

Key elements included banks setting out clear plans on how they were going to address NPLs. Portfolio specific NPL strategies, for example, Mortgage Arrears Resolution Strategies (MARS) were required from the main lenders. Banks' boards were required to approve these strategies encompassing the fair treatment of customers and ensuring adequate capabilities to deal with each customer.

Consumer protection measures such as the Code of Conduct on Mortgage Arrears and enhanced SME protections ran alongside and were interlinked with the prudential measures.

We assessed each lender's strategy and plans, and reverted with firm-specific feedback, follow up actions and timelines in early 2012. While

operational capability had been improved, we remained concerned that banks were overly reliant on short term forbearance or "extend and pretend" strategies. In other words, they were still dragging their feet.

So, to press banks to implement longer term sustainable solutions, we introduced Mortgage Arrears Resolution Targets, underpinned by giving guidance on our view on sustainable solutions that both protected engaging borrowers as well as driving resolution. We also introduced non-public SME Targets for banks.

You will also see that the Central Bank introduced and subsequently updated provisioning guidelines to ensure that there was consistency and conservatism in the recognition and provisioning of NPLs.

Towards the end of the Programme, in 2013, we then repeated the exercise of assessing the strength of the banks' balance sheets, the adequacy of capital and the recognition of NPLs.

We challenged progress every step of the way, going to the outer edge of our remit to do so - challenging the organisational structure and resource capacity, challenging skills and experience, challenging governance and oversight, policies and procedures, workout strategies and execution ability.

We challenged the implementation of the plans, challenged credit management and impairment recognition, challenged provision coverage and collateral valuations, challenged short-term vs sustainable resolutions.

And we continue to challenge the Irish banks today.

And while it is slower than I would like, this approach is working. This has been achieved through better cohort by cohort borrower engagement strategies, working out and sustainably restructuring loans, and some portfolio sales.

Importantly, legislation has been passed to enable borrower protections to travel with loans that have sold outside of the banking system. Accounting write-offs have not yet featured to the extent warranted.

NPLs in Ireland have reduced for fourteen consecutive quarters. It represents a 58% reduction from peak, a decrease of over €50bn. In some ways, this graph understates the progress, because the NPL ratio has been materially reduced at the same time as there has been a very sizeable

deleveraging in the system - loan books (both good and bad) in aggregate are much reduced.

But there remains much more to be done, primarily now on long past due mortgage arrears, which remain a blight for distressed borrowers, banks, and the system as a whole.

The reason I am recalling recent Irish history, is that, in many respects the journey we took in Ireland is now being followed at a European level.

Asset quality and balance sheet strength has always been a priority for the SSM, as evidenced by the Comprehensive Assessment in 2014. When it took on supervisory responsibility for Europe's banks, the NPL outlook was diverse across the euro area.

While certain countries' banking sectors had, and still have, low NPL ratios, it was recognised that even those countries where banks were not struggling with asset quality, may be affected by spillovers.

Through the Comprehensive Assessment, the SSM took early action to gain assurance that problem loans were recognised and that the system as a whole had sufficient capital to manage the problem, both under a base and stress scenario, in the same way as it had been done in Ireland in 2010 / 2011.

Yet NPLs have remained stubbornly high. The banks' responses to the NPL problem have disappointed, in the same way as the Irish banks' initial responses did.

Issues regarding recognition and provisioning for NPLs persisted. Strategies and capability for dealing with them were inadequate. Individually, banks did not appear sufficiently incentivised to address the problem. Furthermore, structural issues in different jurisdictions were causing significant issues.

Following the establishment of an SSM NPL Taskforce, and much work on data collection and jurisdictional differences and approaches, in March this year, the ECB published the final Guidance to banks on non-performing loans.

The Guidance sets the SSM's expectations on NPL management - and prescribes that banks should implement ambitious yet realistic strategies to reduce their NPLs, using a very granular, portfolio-by-portfolio

approach. They must also set internal targets to reduce their NPLs. This does not necessarily mean portfolio sales. The hard yards of engagement with distressed borrowers, workout, restructuring and right-sizing debt must also be cornerstones of successful NPL reduction. Banks should also be taking action through their accounts to reflect the reality of the collectability of long dated NPLs.

Those strategies are currently under the scrutiny of the Joint Supervisory Teams (JSTs), and have become the basis of the day-to-day supervisory dialogue with banks.

It is still early in the process for the implementation of the Guidance, and many banks have submitted credible plans. However, many more still need to improve - indeed some were wholly inadequate and in those cases, banks have been required to resubmit.

The Supervisory Review and Evaluation Process (SREP) continues to underpin the SSM's approach to NPL resolution - imposing quantitative capital and qualitative remediation requirements as part of our annual risk assessment of each significant bank.

Lessons from the Irish crisis

I would like to highlight three key lessons from the Irish experience that are relevant from a European perspective.

Firstly, left to their own devices, individual banks will not resolve Europe's NPL problem, no matter that it is primarily their responsibility to do so.

Intensive, courageous and outcomes-focused supervision is required. And it is not just a one-off effort - it needs to be continuous and persistent, driven by high quality analysis. When we get to the end of the cycle of work we need to start again at the beginning.

The ECB Guidance to banks on non-performing loans is therefore a very important step towards NPL resolution across the European banking system.

Secondly, it is clear from the Irish experience is that no single measure will resolve NPLs.

Supervisors cannot solve it all alone. What has helped Ireland is the combination of factors: including NAMA, increasingly intrusive and

prescriptive supervisory measures, and some legal initiatives. The interplay with economic recovery is obviously hugely important also.

As highlighted by the July 2017 ECB stocktake report on national supervisory practice and legal frameworks related to NPLs, a number of structural obstacles still prevent banks from resolving their NPLs in a timely fashion across the euro area. These include lengthy legal procedures, tax and indeed accounting impediments. Action on all fronts is therefore required - even if Member States do not have high levels of NPLs.

Thirdly, the consequences of a credit boom gone bust are very severe, and can take a huge amount of time to address. Whilst we have made significant progress in addressing NPLs in the Irish banking system, NPL workout and resolution takes time, even with a buoyant economy. Early intervention is therefore critical in to achieve the best outcome for both borrowers and banks.

Moreover, intrusive supervision of current underwriting practices as well as continually assessing the long term sustainability of business models are crucial to prevent recurrence, even as we are still dealing with the legacies of the past mistakes.

Conclusion

Much work remains for the Irish banks to do, and for European banks as a whole. First and foremost, banks must act themselves. But where they do not, or are too slow, or not ambitious enough, it is our job as supervisors to drive them to do so.

In the Central Bank of Ireland, we continue to work tirelessly to earn the trust of the Irish people, both in the work we do ourselves and in the financial system as a whole - such that it is demonstrably serving the long term economic needs of the country and its customers in a sustainable way.

The Central Bank of Ireland will continue to play an active and supportive role in the SSM, as it continues to build its reputation and trust with the public and with the market, not least with respect to our contribution to the ECB's work on NPLs. Thank you for your attention, I look forward to the discussion.

The 2017 Internet Organised Crime Threat Assessment (IOCTA)

The 2017 Internet Organised Crime Threat Assessment (IOCTA) reports how cybercrime continues to grow and evolve.

While many aspects of cybercrime are firmly established, other areas of cybercrime have witnessed a striking upsurge in activity, including attacks on an unprecedented scale, as cybercrime continues to take new forms and new directions.

A handful of cyber-attacks have caused widespread public concern but only represented a small sample of the wide array of cyber threats now faced.

Because of the similar tools and techniques used, it is sometimes difficult to attribute cyber-attacks to particular groups, for example, financially motivated cybercriminals and Advanced Persistent Threat (APT) groups.

Some of the reported cyber-attacks from mid-2017 illustrate this trend.

For genuine financially motivated attacks, extortion remains a common tactic, with ransomware and Distributed Denial of Service (DDoS) attacks remaining priorities for EU law enforcement.

Ransomware attacks have eclipsed most other global cybercrime threats, with the first half of 2017 witnessing ransomware attacks on a scale previously unseen following the emergence of self-propagating 'ransomworms', as observed in the WannaCry and Petya/NotPetya cases.

Moreover, while information-stealing malware such as banking Trojans remain a key threat, they often have a limited target profile.

Ransomware has widened the range of potential malware victims, impacting victims indiscriminately across multiple industries in both the private and public sectors, and highlighting how connectivity and poor digital hygiene and security practices can allow such a threat to quickly spread and expand the attack vector.

The extent of this threat becomes more apparent when considering attacks on critical infrastructure.

Previous reports have focused on worst-case scenarios, such as attacks on systems in power plants and heavy industry.

However, it is clear that a greater variety of critical infrastructures are more vulnerable to 'every-day' cyber-attacks, highlighting the need for a coordinated EU law enforcement and cross-sector response to major cyber-attacks on critical infrastructure.

Law enforcement and industry action has led to a decline in the use of exploit kits.

This has resulted in a shift towards alternative malware delivery methods, including spam botnets and social engineering.

Along with technical attacks, social engineering techniques have become an essential tactic for the commission of many, often complex, cyber-dependent and cyber-facilitated crimes, including payment fraud and online child sexual exploitation.

The success of such attacks is demonstrated by the trend of large-scale data breaches. In a 12-month period, breaches relating to the disclosure of over 2 billion records were reported, all impacting EU citizens to some degree.

Previous reports have highlighted the potential for the abuse of insecure Internet of Things (IoT) devices.

By the end of 2016 we had witnessed the first massive attack originating from such devices, as the Mirai malware transformed around 150 000 routers and CCTV cameras into a DDoS botnet.

This botnet was responsible for a number of high profile attacks, including one severely disrupting internet infrastructure on the west coast of the United States (US).

The vast majority of child sexual exploitation material (CSEM) is still produced by hands-on offenders.

Adding to this, however, is an increasing volume of self-generated explicit material (SGEM), which is either produced innocently, or as a result of the

sexual coercion and extortion of minors. Offenders are increasingly using the Darknet to store and share material, and to form closed communities.

To read more:
https://www.europol.europa.eu/activities-services/main-reports/internet-organised-crime-threat-assessment-iocta-2017

European banking supervision - achievements, challenges and the way forward

Sabine Lautenschläger, Member of the Executive Board of the European Central Bank and Vice-Chair of the Supervisory Board of the European Central Bank, at the ESE Conference 2017, Vienna.

"What does it mean to be human?" This question has preoccupied philosophers for hundreds of years. One of the more popular answers is that humans are rational animals - a view that goes back to Aristotle.

Let us take that question and adapt it to our world: what does it mean to be a European banking supervisor? The answer is certainly not that banking supervisors are rational bankers.

But apart from that, being a European banking supervisor means many things.

First of all, it means looking across borders. It means being tough and fair, unbiased by national interests. For us, it means being part of a team of supervisors from 19 countries and 27 institutions. It means working in the public interest - and having an exciting job.

But it also means dealing with many challenges at the same time. And it is these challenges I'd like to talk about in my speech. But as there are many and as our time is limited, I have to make a choice. So let me first tell you what I won't do today.

I won't discuss the bringing together of cultures and languages that are very different. I won't discuss dealing with banks that struggle to remain profitable. I won't discuss digitalisation, and I won't discuss Brexit.

Instead, I will focus on three issues: first, the rulebook for banks and how it relates to supervision; second, the toolbox that supervisors have at their disposal; and third, the role of the market.

Supervisors and the rulebook

A solid rulebook is a cornerstone of a stable banking sector. It ensures that banks acknowledge the risks they take and build up adequate buffers. A solid rulebook lays the foundations for banking supervisors to do their job.

Since the financial crisis, the rulebook for banks has been thoroughly revised. Today, banks face much tougher rules than before. They need to hold higher capital buffers that consist of better capital. At the same time, they need to hold liquidity buffers - for the first time ever. And these are just two of the things that help to make banks more resilient.

So the regulatory base has been made more solid. But it needs to be more than solid; it also needs to be level. The rules for banks should, in general, be harmonised across countries. Only then would banks be able to compete on a level playing field.

But what's the scope for harmonisation? Here, we should be bold, in my view. The financial sector is global in scope, and so should be the rules that govern it. And after the crisis, it was precisely this idea that drove the work on a global rulebook: Basel III.

But since then, the political landscape has changed. It seems that there are some who have stopped subscribing to the idea of a global approach to regulation. National interests might get the upper hand, and that's not good. Against that backdrop, we need to finalise Basel III as quickly as possible.

But having a global set of standards is just the first step. The second step is for all countries to implement it in a consistent manner. That includes the euro area. Here, a level playing field is even more important, given that we have a single currency and a single market.

And there is indeed a single European rulebook. However, when you take a closer look, it turns out that the single rulebook is not so single, after all. So, in fact, we still have a kind of regulatory hotchpotch in Europe. How can that be?

Well, one reason is that parts of the single rulebook come in the form of EU Directives. And these directives still have to be transposed into national law. That in turn opens the door for significant differences between countries.

One of the many examples relates to what is known as "fit and proper" requirements. Bank directors have to fulfil certain criteria of competence and probity before they can take up their job. However, these criteria differ across the euro area. In some countries, they are quite strict, in others less so. And as the ECB is bound by national law, we cannot provide harmonised supervision in this case.

But the patchwork consists of more than that. The rulebook also contains what are known as options and discretions, O&Ds for short. These O&Ds provide governments and supervisors with some leeway in applying the rules. Again, this has led to differences across countries.

Here we have made some progress, though. Together with the national supervisors, we have agreed to exercise a number of options and discretions in a harmonised manner. But there are still O&Ds that lie in the hands of governments. So it is up to them to bring about more harmonisation. And I admit that I am quite disappointed that so little has been done in this area.

And last but not least, there is a third item that helps to explain Europe's regulatory mix. We still see that some countries are issuing national laws that affect the core of European banking supervision. There are, for instance, national laws that govern risk management. And these laws apply to banks that are directly supervised by the ECB, of course.

Now imagine that there is a banking group with entities in Germany and Spain. This banking group would be subject to different rules when it comes to managing credit risk or to liquidity reporting. Needless to say, this seems ill-suited to a banking union and a level playing field.

Now what does this regulatory hotchpotch mean for European banking supervisors? Well, it makes them less effective and less efficient. In the worst case, they have to deal with 19 national rules instead of a single European one. This makes it hard to treat banks equally. It leads to more bureaucracy and higher costs. It opens the door to regulatory arbitrage, and it distorts competition.

My advice is therefore clear: we must further harmonise the rulebook. Instead of EU Directives, we should rely more on EU Regulations, which can be directly applied in all Member States. We should deal with the remaining O&Ds, and we should stop passing more and more national laws, especially those which apply to banks that are supervised at European level.

Instead, we should strive to cut down on some of these national laws, such as those concerning the reporting requirements that have become redundant as a result of the European Reporting Framework. Scrapping such laws would increase efficiency and reduce costs for both banks and supervisors.

So supervisors need a strong and level regulatory base. However, we must be careful that it does not turn into a cage. How could that happen? How could the rulebook evolve in a way that would confine supervisors?

The problem here is "too much detail", a kind of regulatory "overload" - involving too many stakeholders and too much bureaucracy. There is a tendency to add more and more details to the rulebook. This is driven by a desire to have rules that cover every eventuality. Whatever happens, there should be a rule to deal with it. It would trigger supervisory action. And if it didn't exist, well, then there's no trigger and no action.

However, trying to have a rule for every eventuality is an elusive goal, of course. The business of banking is so complex and fast-changing that no rulebook would be able to fully cover it. The unexpected will always happen. If not by chance, then because banks make it happen on purpose.

And precisely that is one of the problems entailed by an overly detailed rulebook: regulatory arbitrage. The more detailed the rules, the more ways banks can game them. This creates new risks, which are then not covered by the rules.

On top of that, an overly detailed rulebook would make it much more difficult for supervisors to react decisively and quickly to a changing environment. Supervising a bank could turn into a mere box-ticking exercise. And supervisors would turn into experts for tiny details; they could end up focusing on the minutiae and forgetting the big picture.

And that would be a waste. It would be a waste of all the experience, expertise and insights that supervisors have. Why not strengthen their judgement? Why not keep the flexibility they need to react to newly

emerging risks in an ever-changing banking sector? And do all that within a sensible legal framework, of course.

At the end of the day, we need both. We need clear-cut rules, and we need sound supervisory judgement. Adding more and more details to the rules might come at the expense of supervisory judgement. With the recent reforms we have struck a balance in this regard. If we were to upset this balance, it would become much harder to ensure that banks remain safe and sound.

Supervisors and their toolbox

But European banking supervisors need more than an adequate rulebook to do their job. They also need the right tools, of course. They need a European toolbox.

And here, a lot has been done. We have harmonised the main tool of banking supervision: the supervisory review and evaluation process, SREP for short. In the SREP we take a very close look at each bank. We analyse its business model, its governance, its risk management as well as risks to its capital and liquidity positions.

The SREP provides a common yardstick to compare banks across the euro area. It helps us to identify best practices and spot common problems. By referring to the SREP, we develop specific supervisory requirements and measures for each bank. And by the way, supervisory judgement plays a big role in the SREP.

But the SREP is a massive tool, and we still need to refine it. Let me give you an example. As part of the SREP, we review the processes that banks use to assess and maintain adequate capital and liquidity buffers. These processes are known as ICAAP and ILAAP. Based on what we learnt from our SREP exercises, we will refine our expectations regarding ICAAP and ILAAP, and our methods for reviewing them.

And we also need to consider how best to assess the risk management of banks in the SREP. We need to do more than just define what we expect with regard to the management of IT risks, outsourcing or leveraged finance. We need to define fully fledged minimum expectations for the risk management of banks.

But our toolbox comprises more than the SREP. So there are other things that we need to improve.

First, there are tools that are applied in different ways in different countries. On-site inspections at banks are one example. In some countries, the preparation takes some time, while the actual inspection is quite short. In other countries, it is the other way round. This makes it difficult to coordinate and to create international teams of on-site inspectors.

Second, there are tools which exist in some countries but not in others. In this regard, the moratorium tool comes first to mind. It allows supervisors to suspend all the activities of a failing bank for a short period of time. It helps to handle such failures in a timely and orderly manner. Therefore, moratorium powers should be part of the European toolbox.

Another tool that we need to have is called "deductions from own funds". It would help to ensure that banks make adequate provision for risks - adequate from a prudential point of view. The national accounting frameworks allow for some flexibility with regard to provisioning. And what a bank then chooses may not be sufficient from the supervisors' viewpoint, taking into account the bank's risk profile. That's why supervisors should be able to impose prudential deductions from own funds.

And third, there are some tools which are part of the European toolbox not once but twice. And this can cause problems. A relevant case relates to banks that get into trouble and the question of how to intervene as early as possible. As a rule of thumb, banks don't get into trouble out of the blue. Rather, it is a gradual downfall in most cases. Thus, we have tools at our disposal that allow us to step in early and send warning signals to the banks.

This is known as early intervention. However, the relevant tools are the same as some of our standard tools. And this overlap might prevent us from using early intervention tools. The reason is that we are bound to use the least intrusive tool, which is always the standard one. This is particularly relevant should the market authorities demand that the bank disclose whether early intervention tools have been deployed. So, the overlap between early intervention tools and standard tools should be removed.

To sum up, we still need to work on the toolbox of European banking supervisors. We have to expand, harmonise and streamline it.

Supervisors and the market

Now let us come back to my initial question. Being a European banking supervisor means doing an important job. Equipped with an adequate rulebook and the necessary tools, supervisors help to make banks safe and sound. Such banks in turn form the foundations of a strong economy. But we should not become too self-centred.

Banks are private enterprises, and the banking sector is a market, after all. As such, it deploys forces that can help to keep risks in check and secure stability. There were even times when many believed that market forces alone could bring about a stable and efficient banking sector, ensure sustainable business models and make banks resilient to the ups and downs of the economy. That belief was shattered by the crisis.

But don't get me wrong. I believe in the market; in theory, the forces of the market work fine. The problem is just that, in practice, they do not always work so well, for several reasons.

First of all, the market is made by people interacting, and people have their limits. Ample research shows that human brains are not very good at handling risk. We tend to over- or underestimate it; we tend to get carried away by potential gains; and we tend to overreact when things change.

And then, people's behaviour depends on incentives which are sometimes distorted. The most prominent example is this: whenever you can keep the gains but pass potential losses on to someone else, you might be tempted to take on too much risk.

So, in practice, the market has its shortcomings. But is that a reason to do away with it? No, not at all. We should try to make it work. For the banking sector, this means aligning incentives.

And as I just mentioned, the best incentive to keep risks in check is potential failure and financial loss. As the economist Allan Meltzer noted: "Capitalism without failure is like religion without sin. It doesn't work." But in banking, there was a lack of failure.

During the crisis, many banks that should have failed did not fail. Instead, governments propped them up with public funds - at huge cost to taxpayers. They did so out of fear of a systemic crisis. They were worried that when a large bank fails, it would drag others down and destroy the entire system.

So there was a situation where banks could pass on any losses to someone else while keeping any profits. They had an incentive to gamble with other people's money. So, we need to make it possible for banks to fail without causing the whole system to collapse. And we need to make sure that profit-makers are also loss-takers. That would align incentives, strengthen market discipline and keep risk-taking in check.

In Europe, we now have a new system for exactly that purpose: the Single Resolution Mechanism, SRM for short. The SRM provides the tools to resolve banks in an orderly manner. Earlier this year, it passed its first test when a couple of banks failed. This was a huge step towards imposing market discipline on banks and making them safer and sounder.

And I can confirm that dealing with a failed bank is among the most complex things you can do as a supervisor. The first step is that the ECB declares the bank failing or likely to fail. And that, in itself, is a delicate matter.

A bank can fail for a million reasons. Sometimes it is a slow death that drags on over weeks and weeks. Sometimes it all happens within a couple of days. In the end, it is up to the ECB to decide whether the moment has come, and that is a decision which cannot be taken lightly.

Taking it too early might infringe the rights of investors and creditors. Taking it too late might lead to a systemic crisis; it might harm the economy and society. So all in all it is a decision that requires supervisors to carefully judge the case at hand.

Once the ECB has declared a bank failing or likely to fail, another body takes over: the Single Resolution Board, SRB for short. It is the SRB that decides how to deal with the bank.

In a nutshell, this is how we handle failing banks in Europe. Once you start looking at the details, it becomes much more complex, of course. It requires all parties involved to closely cooperate. And it requires all parties, including the banks, to be well prepared. That's why it is so important for banks to carefully draft their recovery and resolution plans.

But as I said, recent experience has shown that our approach works. The ECB, the SRB, the European Commission and the relevant national authorities proved that they can cooperate closely. They have demonstrated that they can deal with failing banks and handle the whole process smoothly.

That said, things can and should be improved, of course. And I am not just thinking of the actual failure of a bank. I am also thinking of what can be done before it comes to that.

And here, we need to think about precautionary recapitalisation, for instance. Under very strict conditions, the European rules on state aid allow banks to be given public funds. However, these aid rules might need an update that would align them with the new European resolution regime.

In this context, we also need to reflect again on how we define solvency. After all, banks need to be solvent in order to receive precautionary recapitalisation. Here, we need to reach a common understanding of how to define solvency, in particular its forward-looking aspect.

As for the banks, they need to reflect on how to handle their liquidity during a crisis. Most importantly, they need to make sure that they have a backstop in place that is readily accessible.

And then, when push comes to shove, we need to improve the tools that are needed to actually resolve a bank. I already mentioned that some tools still need to be added to the European toolbox. The moratorium is one of them.

And finally, we must keep in mind that only systemically relevant banks will be resolved at European level. All other banks will be subject to national insolvency regimes. It might thus be warranted to harmonise these regimes across Europe to ensure a level playing field.

All the things I just mentioned will have an impact on how supervisors assess and react to the risks of banks and the risks of bank failures.

Conclusion

Ladies and gentlemen,

What does it mean to be a European banking supervisor? That was one of my questions at the outset. And the answer was that it means many things. It is a job that is challenging and rewarding at the same time.

Today I have mostly talked about the challenges. I have talked about the need to write a solid and harmonised rulebook. I have talked about the need to expand, harmonise and streamline the supervisory toolbox. And I have talked about how to make the market work again.

To end on a more positive note, let us turn to the rewarding aspects of being a European banking supervisor. Above all, it means being part of a united Europe. It means working towards a stable and truly European banking sector - a banking sector that spans 19 countries and serves more than 300 million people.

And all these people rely on banks. They rely on banks to invest their savings, to help them start a business or buy a home. It is the job of a European banking supervisor to contribute to a stable banking system that can reliably and efficiently serve these needs.

Thank you for your attention.

Through the looking glass

Claudio Borio, Head of the BIS Monetary and Economic Department, OMFIF City Lecture, London.

BANK FOR INTERNATIONAL SETTLEMENTS

"In another moment Alice was through the glass … Then she began looking about, and noticed that … all the rest was as different as possible" – Through the Looking Glass, and What Alice Found There, by Lewis Carroll.

Central banks must feel like they have stepped through a mirror, and who can blame them?

They used to struggle to bring inflation down or keep it under control; now they toil to push it up.

They used to fear wage increases; now they urge them on.

They used to dread fiscal expansion; now they sometimes invoke it.

Fighting inflation defined a generation of postwar central bankers; encouraging it could define the current one.

What is going on in this topsy-turvy world? Could it be that inflation is like a compass with a broken needle? That would be a dreadful prospect – central bankers' worst nightmare.

And what would be the broader implications for central banking?

In my presentation today, I would like to address these troubling questions.

I will do so recognising that "in order to make progress, one must leave the door to the unknown ajar", as Richard Feynman once said.

We should not take for granted even our strongest-held beliefs. That, of course, means that I will be intentionally provocative.

I will make three key points – putting forward two hypotheses and drawing one implication.

First, we may be underestimating the influence that real factors have on inflation, even over long horizons.

Put differently, Friedman's famous saying that "inflation is always and everywhere a monetary phenomenon" requires nuancing (Friedman (1970)). Looking back, I will focus mainly on the role of globalisation; but, looking forward, technology could have an even larger impact.

Second, we may be underestimating the influence that monetary policy has on real (inflationadjusted) interest rates over long horizons.

This, in fact, is the mirror image of the previous statement: at the limit, if inflation were entirely unresponsive to monetary policy, changes in nominal rates, over which central banks have a strong influence, would translate one-to-one into changes in real rates.

And it raises questions about the idea that central banks passively follow some natural real interest rate determined exclusively by real factors, embodied in the familiar statement that interest rates are historically low because the natural rate has fallen a lot.

Here, I will provide some new empirical evidence to support my hypothesis.

To read more:
http://www.bis.org/speeches/sp170922.pdf

Central banking and the risk management of central banks - what are the links?

Erkki Liikanen, Governor of the Bank of Finland, at the Joint Bank of Portugal and European Central Bank Conference on "Risk Management for Central Banks", Lisbon.

INTRODUCTION

About a decade ago we saw the first signs of turbulence in global financial markets. A year later Lehman Brothers went under. We were faced with a full-blown financial crisis.

Later, it was named the Great Financial Crisis. It led to a both qualitative and quantitative change in the operations of central banks and was reflected in their balance sheets. The events forced the central banks to focus on the question what kind of credit they extended, and should extend, in providing liquidity to private banks. Later, the central banks launched large securities purchase programs.

The growth of the central bank balance sheets since the financial crisis has made central bankers pay more attention to the management of financial risks. The evaluation, control and management of financial risks has become more central than before.

Central Banks are financial institutions, and so their risk management is not totally dissimilar with other financial institutions such as commercial banks. But there are very important differences. For central banks, these differences must be understood to perform properly in their policy tasks.

The position and objectives of central banks are different from those institutions that operate on a for-profit basis. Their responsibilities are different, their powers and capabilities are wider, and their accountability requirements are broader.

These differences matter for risk management. Today, I would like to talk on these differences and focus on four aspects of risk management in central banks.

- How should the central bank's mandate and responsibilities influence its risk management?

- How should the risk management function be organized in relation to the policy and investment functions within the bank?

- How should the accountability and transparency requirements be taken into account in managing central bank risks?

- How can financial regulation help the risk management of central banks?

I will conclude by collecting some lessons we have learned during the turbulent, but certainly instructive years since 2008.

I will concentrate on financial risks in the balance sheets and mostly pass over other important risks, such as operational and cyber risks. The area of financial risks is where the special character and responsibilities of central banks probably matter most, making the risk control problems even more complex and nuanced than is the case in "ordinary" banks.

WHAT IS SPECIAL ABOUT CENTRAL BANKS?

As policy institutions, central banks have objectives and responsibilities that differ from the financial institutions operating on a commercial basis. To enable the central banks to fulfil their responsibilities, they also have special powers - especially the monopoly of issuing currency and reserve money.

We should resist the temptation to use the special characteristics of central banks as excuses for not having to implement the best risk management techniques developed elsewhere. The risk management standard and techniques of "ordinary" banks should serve as an obvious starting point when discussing risks. There are differences, but they have to be justified in each case.

How do the risks come about? Central banks take on balance sheet risks as a result of their investment activities (as in holding foreign reserves), their

monetary policy operations, and from time to time as providers of lender of last resort credit to their counterparts.

As investors, central banks have traditionally been conservative. This means that when faced with trade-offs between risk and return, central banks have traditionally tended to favour assets with very low credit risk even if the expected returns from such investments have been modest. Traditionally, central banks have also preferred very liquid, short-term investments. These choices have been clearly visible in the way foreign exchange reserves are usually invested.

As policy makers, central banks influence market conditions and market prices in a unique way. This is the task why central banks exist today, and why they are able to conduct monetary policy. The ability, and indeed the obligation, to steer the money markets in order to deliver macroeconomic stability adds an important extra twist to the risk management problem: the central bank is not just price taker in the financial markets, it is a price maker too. This is one of the features that make them special as investors and lenders.

One may see it as a sort of paradox that central banks, in making policy, themselves seem to create and control much of the risk they themselves bear as investors and creditors. However, the central banks do not actually have arbitrary powers to steer the interest rates or other market prices. They are mandated to exercise their monetary policy powers to pursue specific pre-set goals: the policy objectives for which they are accountable.

In the Eurosystem for instance, price stability is the overriding objective. Therefore, although the actions of the central banks may have an impact on their financial risks, these actions are taken with the requirements of monetary (and financial) policy in view.

So, while the ability to influence market conditions may be important for the risk management problem of central banks, we should not read too much into this. There is a wide agreement that central banks should not use their monetary policy powers as instruments of their own risk management.

There is also a broad agreement that any information central banks have on their future policies should not be used for their own financial gain. In their investment activities and their securities purchases for monetary policy purposes, the preference of the very best creditworthiness has been the traditional risk management technique.

In credit operations, the situation is more complicated. When credit is granted to banks, in monetary policy operations or in last resort lending, the most traditional and still the most important method of risk management is collateral policy. To minimize the probability of loss, the collateral should be safe.

However, since the collateral need not be actually realized except in the case of default of the borrower, collateral requirements need not be the same as the eligibility standards in outright purchases of securities. This can be compensated in other ways. Haircuts are routinely used to compensate for suspected risks in the value of collateral.

This brings us to an important difference between central banks and other institutions: the role of central banks as policy institutions matters for their collateral policy and can make the policy different from usual, private lenders.

The special nature of central banks' collateral policy was first noted by Walter Bagehot, already more than 140 years ago. Bagehot was concerned with how the central bank could best support financial stability. According to the famous Bagehot's rule, in times of crisis central banks should lend freely against good collateral, at a penalty rate of interest. But what should be taken as "good collateral"? It is worthwhile to cite Bagehot (1873) word for word:

"If it is known that the Bank of England is freely advancing on what in ordinary times is reckoned a good security-on what is then commonly pledged and easily convertible-the alarm of the solvent merchants and bankers will be stayed. But if securities, really good and usually convertible, are refused by the Bank, the alarm will not abate, the other loans made will fail in obtaining their end, and the panic will become worse and worse."

The key phrase in this quote is "in ordinary times". Bagehot means that the collateral requirements of central banks should be set as in a situation where the panic (caused by a run for liquidity) would not prevail.

The revolutionary point Bagehot made is that the central bank's collateral policy should not view quality of collateral offered as given. The bank should take into account that its own decisions about what is eligible will affect the quality of the collateral. The central bank should not only take the long view, on the quality of the collateral, but also a confident view, taking into account its power to stem the liquidity crisis.

This rule makes plain the great difficulty of the central bank's risk management problem, which also is a policy problem, whenever there is market stress. The quality of the collateral "in normal times" which Bagehot refers to is not what the market deems it to be; and it is not necessarily the quality that prevailed before a crisis. It is something that will be sustainable in the future.

How is this Bagehot's recommended policy different from the behaviour of the private participants? When deciding on its lending policy the central bank should take into account the effects of its own credit decisions on the quality of the collateral. This is Bagehot's point. That is not easy to do in practice.

The task of the central bank is to assess the quality of the collateral in a future situation after the crisis will have abated. There cannot be any fixed rules for that. In particular, the market does not give a firm guidance: if the central bank always followed the market in deciding what collateral is good, it could not add much to the liquidity of the markets and could not do its job to calm the situation in the case of market stress or panic. On the other hand, the central bank should not believe it can make bad collateral good just by pretending that to be the case and lending money against it.

Bagehot's advice was about collateral policy, reflecting the central banking practices of his time. It has, however, some relevance also for securities purchases in open market policies as well. It is that the market under stress is not always right, not without some guidance at least.

One lesson from the Outright Monetary Transactions, OMT, was that the government bond markets in the euro area were at that time operating under unjustified doubts about the future of euro. The OMT programme confidently declared by the ECB succeeded in correcting the mispricing of the stressed government bond markets, in a way broadly similar to the way in which Bagehot explained the bill market of his time could be pacified.

ORGANIZATIONAL ASPECTS

Turning to the organizational aspects of risk management, we find both similarities and differences between central banks and other financial institutions.

Starting with the similarities, a generally accepted principle that applies to both is that risk control functions and risk-taking functions should be separated. As a rule, this separation should reach the top decision-making

level of the organization. The different business and reporting lines, both those that take risk on behalf of the bank and those that assess and control it, present their views directly to the decision-making level.

After the financial crisis, and the unpleasant surprises which were uncovered in a number of investment and retail banks, the value of following this principle has been understood even more clearly than before.

The top management must be responsible for ensuring and overseeing a strong risk governance framework, and must be able to carry this responsibility. This requires a systematic approach. It includes a strong risk culture, a well-developed and explicit policy regarding to risk taking and risk management, up-to-date methodologies for measuring financial risks, and well-defined responsibilities for risk management and control functions.

An effective risk control function is a key component in the organization. This function is responsible for overseeing risk-taking activities across the institution. The important thing is that it should have the authority it needs. The risk control function should be independent, with sufficient stature, resources and direct access to the board.

Risk reporting to the board requires careful design in order to convey bank-wide, individual portfolio and other risks in a concise and meaningful manner. Reporting should accurately communicate risk exposures and results of stress tests or scenario analyses and should provoke a robust discussion of, for example, the bank's current and prospective exposures (particularly under stressed scenarios).

A balance should be found between the independence of the risk control function, on the one hand, and smooth horizontal information flows on the other. As emphasized in BIS principles for risk management, for example, banks should avoid organizational "silos" that can impede effective sharing of information across the organization. Necessary cooperation between the functions should of course never compromise the special independent role of the risk control function.

In "ordinary", for-profit institutions, the main organizational challenge is to reconcile the business orientation of the revenue-generating functions with the caution guarded by the risk controlling function. This balance has to be managed at a high, responsible decision-making level.

A broadly similar, but wider balancing challenge exists also in central banks. Their problem of organizing risk control and management is more complex than in for-profit institutions.

While the central banks have important investment functions, much like other banks, they also have separate monetary policy responsibilities and functions. The organizational architecture must therefore accommodate more distinct functional lines than in an ordinary financial institution - at least the investment function, the monetary policy preparation and execution, and finally the risk control function.

The presence of the monetary policy preparation and execution function is an added complication to risk management that is characteristic to central banks, when we compare them to other banks. Monetary policy planning and execution should not be hampered by hidden considerations of risk or gain.

Likewise, it is necessary that monetary policy decision are taken with full awareness of their expected financial consequences and the associated risks. Only then, with adequate risk information, can the responsible decision makers really discharge their responsibilities.

The idea of a completely independent risk control function had been around at least from 1990's, but it took the latest crisis to galvanize the central banks to take bigger steps. Before the crisis a typical solution was to have separate responsibilities at the board level, but not a fully independent business line or unit for risk management and control. This has been changing.

In the Bank, which I know best, the risk control function was reorganized from the beginning of 2009. A separate unit was established with its own reporting line to the board. This reorganization had been in preparation for a couple of years already before the crisis, but the perception of increased riskiness of the environment certainly accelerated the implementation of the change.

Within the ECB, the audit committee has been active in promoting enhancements in the risk management of the ECB and the Eurosystem as a whole. Especially at the Eurosystem level, the cooperation between member central banks was previously too limited and slow to cope with the new situation which emerged during the crisis. A much more unified and timely view of the aggregate risks was needed.

In September 2010, a separate system-wide Risk Management Committee was established. Previously, the system-wide cooperation on risk management matters had taken place in a working group reporting to the Market Operations Committee. The creation of an independent committee signalled increasing weight on risk management and was in line with the principle of independence of risk management. Within the internal organization of ECB itself, the status of the risk management function was enhanced, too, and it was promoted to the level of a directorate in 2012.

These changes have been significant, but it would not be proper to claim that the development of the risk management organization and its activities in the Eurosystem are now complete. The assessment and especially the quantification of risks is a task which is always incomplete and always in need of further development. Nevertheless, I think that significant improvements have been achieved and the governors, the governing council and the board members have now a much better overview of the financial risks of their banks and the whole Eurosystem than before.

ACCOUNTABILITY AND TRANSPARENCY

The organizational principles that I discussed above relate mainly to sufficient internal information flows within the institution. However, external information can be strategically just as important as internal management information. Therefore, financial institutions, both ordinary banks and central banks need to reconsider from time to time their transparency and communication about their risks. There are central banks, which have started to report publicly about their risks.

Ordinary, for-profit banks need transparency at least vis-à-vis their customers, creditors and shareholders, as well as their supervisors. All these stakeholders are very interested in the risks of the bank they are dealing with.

Central banks are in a somewhat different position. For one thing, the set of stakeholders of central banks is broader. In particular, it includes political decision makers (in governments, parliaments etc.) and the general public as citizens, money-holders, voters and taxpayers. In addition to being larger, the interests of these political constituencies in the central bank are more complex and many-sided than the interest of the stakeholders in a commercial bank.

Communication and transparency about financial risks is of course only one facet of the central bank's general communication tasks. Another facet is policy transparency. Actually, these two are closely intertwined: experience shows that it is clearly necessary, in order to maintain public trust in the central bank's monetary policy and liquidity-supplying operations, to be clear about the reasons and consequences of the policies. Otherwise, the central bank may even endanger the necessary public acceptance of its operations.

This has an important implication: The transparency and public reporting of central banking risks should be embedded in a broader economic perspective. This does not only apply to the content of the risk information per se, but we should probably develop new ways to present the financial risk of central banks in their economic context, not only as isolated Value-at-Risk or Expected Shortfall numbers (for example). The increased transparency along the lines that have been developed has made a positive contribution, but still, it seems that finding new ways of presenting risks better in context could be very useful.

In the final analysis, the concern about risks has to do with capital adequacy of the central banks. This must be maintained, with a margin of caution, at levels where the independence of monetary policy is not endangered. The central banks must be able to accumulate sufficient reserves and provisions to safeguard their position. As they are public bodies, this is also a matter of public trust and political acceptance, on which central banks depend.

We might note that the Eurosystem and the ECB are in somewhat different position in that regard than the Federal Reserve, for example. Because of its institutional position, the Federal Reserve is able to operate with quite small own capital. In Europe, by contrast, the Central Banks are by construction financially more separated from the governments. This means that they must be quite self-reliant in terms risk-bearing capacity and of capital buffers.

ON FINANCIAL REGULATION

The changes in central bank's risk management have occurred in parallel with major reform in banking regulation, globally and especially in the EU. These reforms have been necessary on general terms, but as a by-product, they also facilitate the central banks' risk management tasks.

First, better regulation will improve the creditworthiness of the central banks' monetary policy counterparts and thus make risk management easier for central banks. Direct credit risk will be smaller. Second, better regulation and more solid banks will also reduce the likelihood of market disturbances caused by shortages of liquidity, or runs for safe assets. This will reduce the central bank's burden in stabilizing the financial markets, and enable the central bank to concentrate its attention better on its monetary policy tasks.

The aspects of banking regulation that ease the burden on central banks include better capital adequacy requirements, stricter liquidity norms, and the general improvement in supervision and supervisory information, including the periodic stress tests. These stability-enhancing developments will help to reduce the dependence of the financial system on central banks.

In the euro area, in particular, central bank risk management benefits from the current European projects to complete the EMU, especially the Banking Union initiatives:

Single supervisory mechanism has already improved supervisory information and the general trust on euro area banks, thereby facilitating the ECB's operative tasks.

The European Deposit Insurance Scheme, which I hope will move forward soon, will help stabilize bank liquidity even under future adverse shocks.

The regulatory framework is not complete even when the projects I mentioned will be finalized. It is not complete even from the central banks' risk management point of view.

The constantly evolving financial industry brings up new challenges which must be taken into account.

Currently, the unregulated segment of financial intermediation ("shadow banks") are a source of concern.

They make the central banks' job of protecting financial stability harder, because they are not subject to the same monitoring and accounting scrutiny as banks, and as they cannot be monetary policy counterparts of central banks, their liquidity can be more fragile.

The consequences of the activities of the shadow banking sector to the volatility of the supply of liquidity is a challenge which awaits proper regulatory response.

CONCLUSIONS

The central banks have faced new challenges in their risk management over the last decade. These challenges are in some respect similar to what other banks have met, but the policy role of the central banks have made them even more complex.

The central banks must consider not only their own risks but also broader risks in the financial sector and the macro-economy when they make decisions about what risk to take.

The challenges in organizing the risk management function in central banks are more challenging than in other financial institutions, because of the interaction of their policy responsibilities,

To cope with these challenges, it is essential that:

While prioritizing their policy responsibilities, the central banks should take care of their financial health (adequate capitalization) so that they are not vulnerable to the financial consequences from their policy tasks.

Central banks need to ensure that the political decision-makers and the general public understands what the central banks are doing and why.

Lack of communication and lack of transparency can breed suspicion that the central banks are taking risks that are excessive relative to the benefits achieved with their policies.

Deep and coherent participation by the central banks in the public debate at the national and euro area level are needed.

In terms of financial regulation, the challenges that the central banks' policy responsibilities cause to their risk-taking capacity are met more easily if the financial health of the banking system is sound; if the supervisory information is sufficient; and if crisis management procedures and institutions are up to their tasks.

When those conditions are met, the central banks' main financial stability task, the provision of liquidity to fundamentally sound institutions, is

easier to fulfil. The central bank should not be expected to constitute "the only game in town".

In the euro area in particular, I would call for determined completion of the banking union, including the resolution fund and common deposit insurance, as well as taking the capital market union forward in order to improve the resiliency of the European financial markets in general.

These provide the best prerequisite for central banks to succeed in their work.

Expanding Tolstoy and Shrinking Dostoyevsky
How Russian Actions in the Information Space are Inverting Doctrinal Paradigms of Warfare

Maj. Scott J. Harr, U.S. Army

In February 2013, Russian Chief of Staff Valery Gerasimov published "The Value of Science is in the Foresight," which describes a twenty-first century battlefield replete with new methods, capabilities, and applications of war that transcend accepted contemporary definitions and uses of military power.

Subsequent Western debate on Gerasimov's discourse (dubbed the "Gerasimov Doctrine") often focuses on whether Gerasimov's ideas represent old or new ways of war and whether Gerasimov intended to describe a distinctly Russian style of warfare for the twenty-first century.

To be sure, the evolution of military thought and science is an ongoing discussion within Russia that involves not just Gerasimov, but other prominent Russian military officers as well.

So, as retired Lt. Col. Timothy Thomas points out, it is wise for Western military analysts to not exclusively categorize trends in Russian warfare.

However, the Gerasimov Doctrine represents the most powerful and relevant current adaptation of Russian military thought, and it describes a new type warfare that emphasizes Russian development of capabilities to defend and win in the cyber and information domains as the critical domains of future warfare (vice actual kinetic combat).

In any case, Russian actions on the international stage have demonstrated a style of warfare that comprehensively integrates all instruments of national power (in militaristic ways) to achieve strategic objectives countering Western influence.

The title of the renowned Russian novelist Leo Tolstoy's masterpiece

War and Peace alludes to discrete conditions of the modern Russian approach to warfare.

Like Western concepts of the "gray zone," the Tolstoyan concept expands the spectrum between war and peace to include levels of conflict that satisfy neither of the extremes—yet remain viable arenas to promote strategic interests using force.

Likewise, akin to the boundaries of criminality that timeless Russian author Fyodor Dostoyevsky explored in his classic work Crime and Punishment, current Russian modes of warfare have shrunk the criminal boundaries of war and blended the rules of warfare to enable more interaction among the instruments of national power to pursue strategic interests.

To read it (page 39):
http://www.armyupress.army.mil/Portals/7/military-review/img/ENGLISHs02017/SEPT_OCT_2017_COMPLETE_BOOK.pdf

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