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CENTRAL BANK MONITORING – DECEMBER

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In this issue

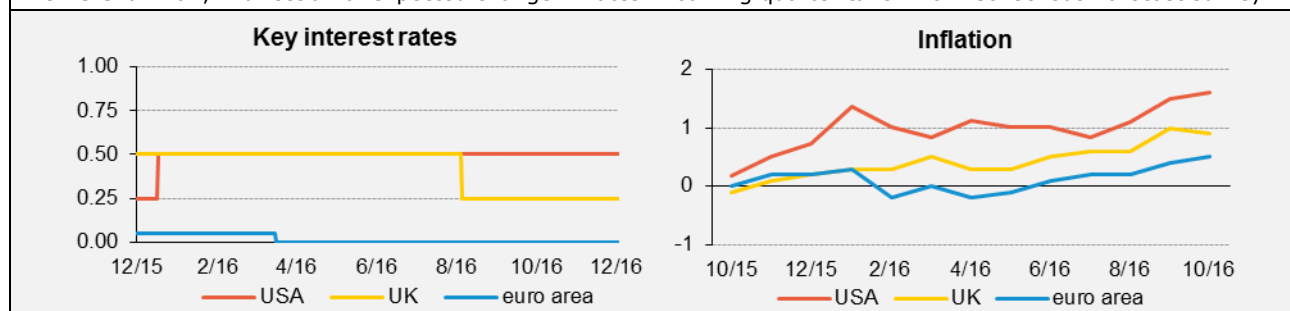
Most of the central banks under review are maintaining their interest rates at the current low level or considering a further monetary policy easing. For example, Norges Bank is considering lowering its key rate and the Riksbank increasing the volume of purchased bonds. The Reserve Bank of New Zealand has lowered the key rate further. The ECB left interest rates unchanged in the previous period but extended its bond purchase programme and adjusted its parameters. On the other hand, the global economy is watching anxiously whether the Fed's interest rates increase as expected at the close of this year. Spotlight addresses the effect of climate change on the financial sector, including central bank policies. In our Selected speech, member of the Executive Board of the Deutsche Bundesbank Andreas Dombret focuses on the perspectives of business models of commercial banks.

1. LATEST MONETARY POLICY DEVELOPMENTS AT SELECTED CENTRAL BANKS

Key central banks of the Euro-Atlantic area

	<u>Euro area (ECB)</u>	<u>USA (Fed)</u>	<u>United Kingdom (BoE)</u>
Inflation target	<2% ¹	2% ²	2%
MP meetings (rate changes)	20 Oct (0.00) 8 Dec (0.00)	20–21 Sep (0.00) 1–2 Nov (0.00)	15 Sep (0.00) 3 Nov (0.00)
Current basic rate	0.00%; -0.40% ³	0.25–0.50%	0.25%
Latest inflation	0.6% (Nov 2016) ⁴	1.6% (Oct 2016)	0.9% (Oct 2016)
Expected MP meetings	19 Jan 9 Mar	13–14 Dec 31 Jan – 1 Feb	15 Dec 2 Feb
Other expected events	9 Mar publication of forecast	18 Jan: publication of Beige Book, Feb: Monetary Policy Report	2 Feb: publication of Inflation Report
Expected rate movements⁶	→	↑	→

¹ ECB definition of price stability "below but close to 2%"; ² January 2012 definition of inflation target; ³ deposit rate; ⁴ flash estimate; ⁵ the meeting includes a summary of FOMC economic forecasts and a press conference by the FOMC Chairman; ⁶ direction of expected change in rates in coming quarter taken from Consensus Forecast survey.



The **ECB** did not change its key interest rates; it extended the asset purchase programme (APP) in line with prevailing expectations, at least until the end of 2017, but at the same time announced surprisingly that it would reduce their monthly volume by EUR 20 billion from April 2017 (i.e. from the current EUR 80 billion to EUR 60 billion). It also adjusted certain details of the purchases (see *News*). The ECB also confirmed that it expects interest rates to remain at the current low level or lower levels after the asset purchases end. The current ECB forecast remains broadly the same as in September. The ECB expects GDP to grow by 1.7% in 2016 and 2017 and by 1.6% in 2018. Inflation will remain very low in 2016 (0.2%) and increase to 1.3% and 1.5% in 2017 and 2018 respectively.

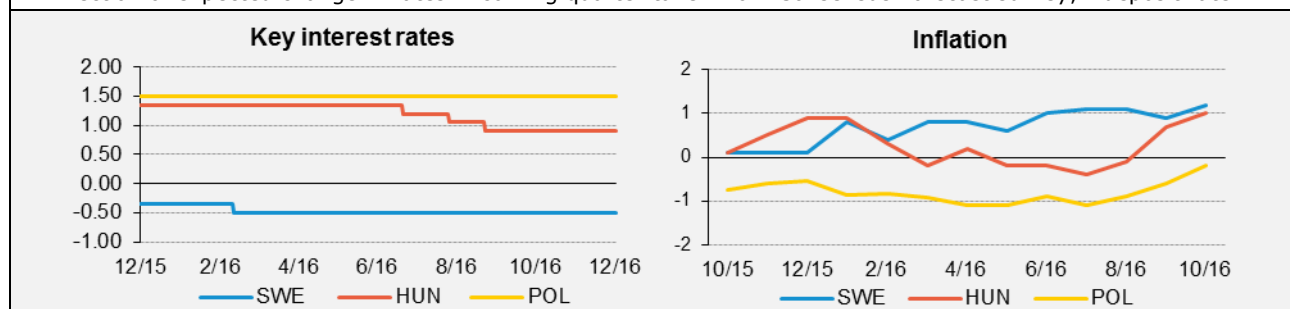
The **Fed** left interest rates unchanged in the range of 0.25–0.50% in November. Markets expect an increase in rates before the end of 2016 practically with certainty. Three of the ten FOMC members advocated an interest rate increase of 0.25 pp at the November meeting. According to the FOMC, inflation will remain low. The Fed expects the 2% target to be hit in the medium term. The GDP growth estimate for Q3 was 3.2% as against expectations of 2.9%, which is the best result in two years, driven mainly by exports.

The **BoE** left its key interest rate at 0.25%. It has purchased bonds totalling GBP 10 billion since August 2016; this programme should take 18 months. It also purchases government bonds in series; aggregate holdings of government securities will thus amount to GBP 435 billion. Inflation increased slightly, to 0.9% in October. The BoE expects it to rise further, to around 2.7% in 2018. It will largely be affected by the recent depreciation of the pound and the subsequent growth in import prices. At 2.3%, the published figure for GDP growth in Q3 exceeded the BoE's expectations, due mainly to growth in the services sector.

Selected central banks of inflation-targeting EU countries

	Sweden (Riksbank)	Hungary (MNB)	Poland (NBP)
Inflation target	2%	3%	2.5%
MP meetings (rate changes)	26 Oct (0.00)	20 Sep (0.00) 25 Oct (0.00) 22 Nov (0.00)	4–5 Oct (0.00) 8–9 Nov (0.00) 6–7 Dec (0.00)
Current basic rate	-0.50 %; -1.25% ²	0.9 %; -0.05% ²	1.50%
Latest inflation	1.2% (Oct 2016)	1.0% (Oct 2016)	0% (November 2016)
Expected MP meetings	20 Dec 14 Feb	20 Dec 24 Jan 28 Feb	10–11 Jan 7–8 Feb 7–8 Mar
Other expected events	15 Feb: publication of Monetary Policy Report	28 Mar: publication of Inflation Report	13 Mar: publication of Inflation Report
Expected rate movements¹	→	→	→

¹ Direction of expected change in rates in coming quarter taken from Consensus Forecast survey; ² deposit rate.



The **Riksbank** left its key interest rate at -0.5% in October and moved closer to reaching the total planned volume of bond purchases amounting to SEK 245 billion in 2016. A decision to increase the volume of purchased bonds and an extension of the programme can be expected in December. The Riksbank does not rule out a further lowering of the repo rate and, compared to the September forecast, it expects to maintain it at a low level six months longer, i.e. it places the first expected rise in the rate to late 2017 and early 2018. The main motivation for continued expansionary monetary policy is to reduce the risk of interrupting the current upward trend in inflation. The Riksbank lowered the inflation outlook only marginally for 2016 (to 1% and 1.4% for CPI and CPIF respectively), but more significantly for 2017 (to 1.4% and 1.6% for CPI and CPIF respectively).

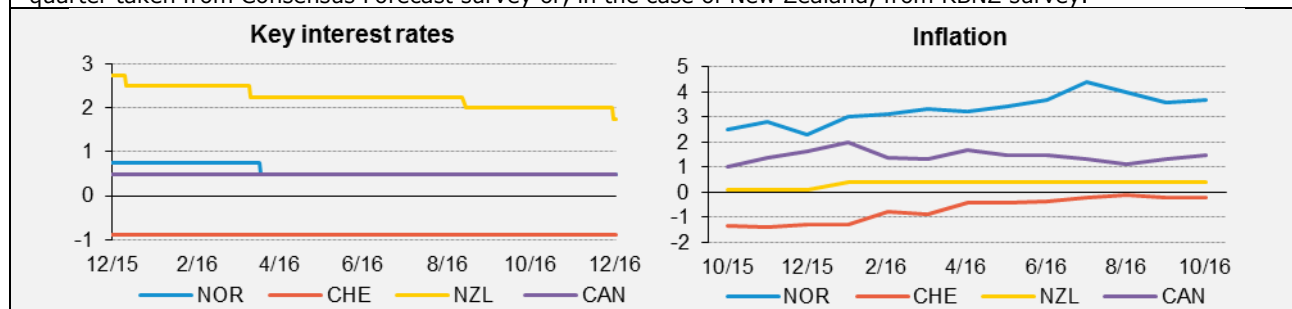
The **MNB** left its key interest rate unchanged at 0.9%. The deposit rate remains at -0.05%. However, it narrowed the rate corridor, as it lowered twice the upper boundary of the interest rate band in the form of the overnight lending rate on secured loans to banks. It lowered this rate cumulatively by 0.25 pp to 0.90%, fostering a further easing of the monetary conditions. The economy in Hungary grew at 2% year on year in Q3, fast growth continued in retail trade and household consumption is expected to pick up. This is affected favourably by the labour market, where employment keeps growing and unemployment is declining. Since October, the MNB has limited the volume of money which commercial banks may deposit with it to HUF 900 billion, which, according to the MNB, means crowding out at least 200–400 billion of liquidity from the deposit facility. The MNB is also ready to apply unconventional or precisely targeted monetary policy instruments.

The **NBP** left its interest rate at 1.5%, where it has kept it for almost two years. Economic growth slowed to 2.5% year on year in Q3, mainly as a result of a decline in investment due to a lower drawdown of EU funds and also due to lower exports. The NBP expects household consumption and investment to grow faster next year. The decrease in consumer prices halted in November. However, the return to the inflation target will be rather gradual.

Other selected inflation-targeting countries

	Norway (NB)	Switzerland (SNB)	New Zealand (RBNZ)	Canada (BoC)
Inflation target	2.5%	0-2%	2%	2%
MP meetings (rate changes)	22 Sep (0.00) 27 Oct (0.00)	15 Sep (0.00)	22 Sep (0.00) 10 Nov (-0.25)	19 Oct (0.00) 7 Dec (0.00)
Current basic rate	0.50% -0.50 reserve rate ¹	from -1.25 to -0.25% ² ; -0.75% ³	1.75%	0.5%
Latest inflation	3.7% (Oct 2016)	-0.2% (Oct 2016)	0.4% (2016 Q3)	1.5% (Oct 2016)
Expected MP meetings	15 Dec 16 Mar	15 Dec 16 Mar	9 Feb 23 Mar	18 Jan 1 Mar
Other expected events	15 Dec: publication of Monetary Policy Report	15 Dec: publication of Monetary Policy Report	9 Feb: publication of Monetary Policy Statement	18 Jan: publication of Monetary Policy Report
Expected rate movements⁴	↓	→	→	→

¹ only on reserves exceeding the quota; ² chart displays centre of band; ³ negative deposit rate used to remunerate bank's balances with the SNB in a graded manner by volume; ⁴ direction of expected change in rates in coming quarter taken from Consensus Forecast survey or, in the case of New Zealand, from RBNZ survey.



The **NB** kept its interest rate unchanged at 0.50% at its previous meetings. Governor Olsen even mentioned its possible further decline at the September meeting (the forecast expects it to decline to 0.25% by the end of the year). Weaker growth prospects persist for the Norwegian economy, despite an increasing price of oil and the resulting benefits for the economy. Inflation stood at 3.7% in October. Property prices recorded an annual increase of 10%, with large cities showing even faster price growth. The countercyclical capital buffer rate remains unchanged at 1.5%.

The **SNB** left the interval for its monetary policy interest rate (3M LIBOR) at -1.25% – -0.25% at the June meeting; the rate used to remunerate banks' balances with the SNB was also unchanged at -0.75%. The negative interest rates and the willingness to intervene in the foreign exchange market express the central bank's intent to make the Swiss franc less attractive for foreign investors. At 1.3%, GDP growth lagged behind expectations in Q3; the SNB expects it to reach 1.5% in 2016 as a whole. According to a new forecast, the price level will slow its decline in the rest of the year and later rise gradually. The SNB expects deflation of 0.4% in 2016 as a whole and inflation of 0.2% and 0.6% in 2017 and 2018 respectively.

The **RBNZ** lowered its key rate by 0.25 pp to 1.75% in November to foster a correction of the previous appreciation of the exchange rate of the New Zealand dollar and, at the same time, to mitigate the decline in inflation and inflation expectations. Nevertheless, the decline in inflation in Q3, as expected by the bank, did not materialise and inflation is even expected to rise in Q4. The growth rate of property prices averaged 13% for the last six quarters.

The **BoC** left its key interest rate unchanged at 0.5%. At 1.5%, inflation lagged behind the BoC's expectations in October. This was due mainly to lower food prices. Core inflation is almost 2%. After a weaker H1, GDP growth picked up to a strong 3.5% in Q3, due mainly to higher growth in household consumption. The BoC renewed its 2% inflation target by another five-year period (for more details see *News*).

2. NEWS

ECB adjusts parameters of its [asset purchase programme \(APP\)](#) as well as the [public sector purchase programme \(PSPP\)](#)

The APP will be extended by nine months until the end of 2017. The euro area central banks will be allowed to purchase securities with a yield below the ECB's deposit rate. The minimum remaining maturity for the PSPP will be decreased from two to one year. In addition, euro area central banks will have the possibility to accept cash as collateral in their PSPP securities lending facilities; the maximum overall limit for such transactions is EUR 50 billion. Until now, the PSPP lending programme accepted only collateral consisting entirely of German bonds, which further contributed to the lack of German government bonds on the repo market.

[Bank of Canada renews its 2% inflation target for another five-year period](#)

In October 2016, the BoC and the Government of Canada renewed the inflation target at 2% with a tolerance band of $\pm 1\%$ for another five-year period, i.e. until the end of 2021. The targeted variable will continue to be defined in terms of the 12-month rate of change in the total consumer price index (CPI). However, this will change the observed measure of core inflation (CPIX) – the CPI index adjusted for the eight most volatile components and the effect of changes to indirect taxes – used since 2001. From 2017, the BoC will observe three new indicators which, according to its analyses, better capture long-term trends: CPI-common, CPI-median and CPI-trim.¹ At the same time, when pursuing monetary policy, the BoC will apply the "risk-management approach", i.e. it will also take into account risks to financial stability when achieving the inflation target. Less favourable inflation levels may be tolerated over a short-term horizon to avert the risks to financial stability which might have serious impacts in the long term (for more information about these changes see the [background information](#) and other BoC [documents](#)).

[Bank of Japan to focus on yield curve control](#)

The Bank of Japan (BoJ) introduced new measures to achieve 2% inflation. It abolished the previous targeted volume of asset purchases and will focus on yield curve control instead: it will continue to purchase government securities so that the 10Y government bond yield remains around zero. The interest rate on deposits of commercial banks with the BoJ remained at -0.1%. At the same time, the BoJ announced that easy monetary policy would continue until inflation exceeded 2% and stayed above this level in a stable manner.

[Mark Carney to continue as Governor of the Bank of England until June 2019](#)

Governor Mark Carney [announced](#) in October that, given the need for continuity at the time of the UK's exit from the European Union, he would extend his term to the end of June 2019. He thus decided to extend his five-year time of service he had announced at the time of his appointment to the office (a standard term of office of the BoE Governor is eight years). The BoE also [announced](#) that Deputy Governor Minouche Shafik would leave the bank in February 2017 to become the Director of the prestigious London School of Economics (LSE).

[Riksbank to decide about digital currency within two years](#)

The Riksbank is discussing a possible introduction of a digital currency issued by the central bank in the coming two years. According to Vice-Governor C. Skingsley, this digital currency

¹ CPI-trim (trimmed mean) is a measure of core inflation that excludes CPI components whose rates of change in a given month are located in the tails of the distribution of price changes. CPI-median (weighted median) is a measure of core inflation corresponding to the price change located at the 50th percentile (in terms of CPI basket weights) of the distribution of price changes in a given month. CPI-common (common component) is a measure of core inflation that tracks common price changes across categories in the CPI basket.

("e-krona") should not replace current cash but only complement it. The aim of the currently launched project is to propose principles of its possible functioning and investigate what possible problems might arise after its introduction. The introduction of a digital currency provided by the central bank directly to the people (i.e. without the involvement of commercial banks) was also addressed in a [speech](#) by Vice-Governor of the Bank of England B. Broadbent in early 2016. He believes a greater shift of deposits of retail clients away from commercial banks to the central bank would reduce availability of liquidity to commercial banks, impair their lending ability and threaten their current business models. For this reason, C. Skingsley suggests that deposits in the e-krona should not be remunerated.

Governor of the Central Bank of Mexico to take on top job at the BIS

The Central Bank of Mexico (Banco de México, BdM) [announced](#) that its governor Agustín Carstens would resign from his post in July next year to run the Bank for International Settlements (BIS) as its General Manager from October 2017. He is going to replace the outgoing Jaime Caruana, the BIS General Manager since 2009. Carstens, a respected governor, has been at the helm of Mexico's central bank since 2010. In January 2016 he was appointed for another six-year period, but he is not going to complete his term as a result of accepting the new BIS position.

[India changes the highest denominations of banknotes in circulation](#)

The government of India [withdrew](#) two banknotes with the highest denominations (INR 500 and 1,000) in early November in order to tackle counterfeiting and combat corruption, tax evasion and terrorism financing. The RBI also put two new banknotes into circulation (INR 500 and 2,000). This measure caused chaos in the Indian economy, where cash transactions account for a substantial part of payments, as the previous two highest denominations account for more than 80% of banknotes in circulation, banks do not have enough new banknotes available for exchange and more than a half of ATMs are not technically ready to dispense the new banknotes. In response to the panic, the Reserve Bank of India (RBI) issued a [statement](#) [as](#) ensuring that it had enough new banknotes available and that preparations were in progress for their transport to bank branches all over the country. As a result of the inflow of cash into banks (almost INR 3 billion in the first four days), a decline in short-term interest rates is expected.

[Big data in central banking](#)

Central Banking conducted a survey among central banks during August and September examining how central banks view big data. Anonymous replies were provided by 42 central banks worldwide. According to the [results](#), central banks have an active interest in big data and aim to improve processing technology. Big data is predominantly regarded as useful for research, but a significant minority sees scope for its immediate involvement in central bank policy-making, especially monetary policy and to a lesser extent also macroprudential policy.

3. SPOTLIGHT: CLIMATE CHANGE AND THE FINANCIAL SECTOR

Until recently, climate change has been viewed as the domain of ecology, and economics mostly took it into account only as a short-term disruption to economic growth in the form of the consequences of extreme climatic phenomena. In recent years, however, there has been a trend (not only) in the financial sector to view climate change also in the long term, to assess its possible impacts and to propose how to contribute to its mitigation. This article sums up the financial world's view.²

Climate change and global warming observed over the past few decades are undisputed from the scientific point of view and markedly visible compared to the previous period. Their consequences include a rise in the sea level and changes in the weather characteristics as well as more frequent occurrence of extreme climatic phenomena. Climate change also seems to increase the correlation between the occurrence of individual phenomena, as shown for instance in the accumulation of storms.

The high and still increasing concentration of greenhouse gases (carbon dioxide in particular) in the atmosphere has been identified as the main cause of global warming. Although the role of human activity in the rising concentration of greenhouse gases is still being discussed ardently and categorically rejected by some parties, governments of an increasing number of states have started to commit to reduce CO₂ emissions.³

The effect of climate change on the financial sector – three possible risks

Climate change affects the financial sector and its stability primarily through the **direct impacts** of more frequent extreme climatic phenomena. They generate higher costs for the insurance sector, which pays damages to clients. According to statistics, the number of weather-related insurance claims has tripled since the 1980s and the related insurance losses adjusted for inflation rose from USD 10 billion a year in the 1980s to around USD 50 billion a year in the last decade. Disasters also reduce the value of investment and the value of collateral held by the banking sector for loans provided.

The insurance sector is already responding to climate-related risks, incorporating them into its models. It increases premiums on certain risks in disaster-prone regions and, ultimately, may cease to provide insurance. Nevertheless, this may negatively affect other financial sector entities, e.g. banks. Lower insurance cover causes the balance sheets of local households and corporations to deteriorate and limits their credit options; should a disaster occur, the probability of default may increase for existing loans.

Larger-scale extreme climatic phenomena may affect the banking sector's ability to lend. If banks themselves are affected, lending may be limited so that banks comply with the

² This issue has been tackled systematically e.g. by the Bank of England (BoE), whose Governor Mark Carney has repeatedly addressed this issue in his speeches. The BoE issued a [paper](#) on this issue in May 2016 (Working Paper 603, "Let's talk about the weather: the impact of climate change on central banks").

³ Climate change has been discussed at the inter-governmental level since 1979. The United Nations Framework Convention on Climate Change was signed in 1992. It has been progressively ratified by individual states, which meet at climate change conferences (Conference of the Parties – COP) where they discuss the mitigation of the impacts of climate change. An agreement to reduce greenhouse gas emissions was approved at the latest conference in Paris in 2015. The agreement took effect on 4 November 2016 after ratification by a sufficient number of countries which undertook to a) hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels; b) increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; c) make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. Individual countries must submit their intended national determined contributions (INDC) by 2020, in which they set their commitments for the reduction of emissions until 2050. Advanced states are to establish a financial mechanism by 2020 through which at least USD 100 billion will be provided annually to support climate protection in developing countries. (For example, the EU provided EUR 17.6 billion for this purpose in 2015.)

prescribed capital ratio. Lending in unaffected regions may be reduced due to higher credit exposures in disaster regions. The financial system may also be destabilised due to liquidity hoarding by households and corporations in affected regions.

The second (so far hypothetical) risk related to climate change is the payment of higher compensation from **liability insurance** of clients sued due to their role in the deterioration of the environment – e.g. companies engaged in the mining and oil industries. Legal actions have already been filed against these companies, but the degree of scientific knowledge does not make it possible to prove unambiguously a causal relationship between their activities and global warming. As it is probable that it will be possible to put these accusations on a scientific bases in the course of time, this risk to insurance companies cannot be ignored.

The third risk for the financial sector relates to the **shift to a low-carbon economy** as economies must radically reduce their carbon intensity to reduce greenhouse gas emissions.⁴ This shift will be connected with a decline in prices of “carbon assets”,⁵ in which e.g. the European financial sector invested around EUR 1 trillion. A gradual and transparent shift will result in a gradual decline in prices of carbon assets, which the financial sector will be able to cope with. However, if the solution is sudden (for example, government policy relating to CO₂ emissions suddenly tightens strictly), prices of these assets may fall sharply as a result. This will lead to problems in the balance sheets of the financial institutions holding these assets and may result in a surge in corporate problems and bankruptcies in numerous carbon-intensive corporations. In the event of their strong debt, this may pose a threat to financial stability.

The impacts of a sudden fall in prices of carbon assets on the financial sector could be specified by stress tests. However, they cannot be performed at present since non-financial corporations do not publish enough relevant information, such as the carbon intensity of corporate inputs and technology including the costs of their replacement with low-carbon alternatives. Therefore, a framework is being considered to define the necessary information and recommend a frequency of its publication.

An effort to create this framework is [being made](#) for instance by the European Systemic Risk Board (ESRB), which is considering a form of support of voluntary publication of this information by the industry or its enforcement by means of certain regulations. The Financial Stability Board (FSB) set up the Task Force on Climate-related Financial Disclosures ([TCFD](#)) at the end of 2015, which includes, among others, representatives of industry, financial institutions and climate change experts. The aim of the TCFD is to make recommendations for disclosure of this information by non-financial corporations to creditors and other stakeholders. The TCFD will submit a final report to G20 representatives at the start of 2017.

The effect of climate change on central banking

The impacts of climate change are currently relevant for central banks mainly in cases of larger-scale extreme climatic phenomena, where monetary authorities have to react depending on the nature, extent and expected duration of the impacts of such disasters. Their reactions

⁴ It will therefore be necessary to invest more in research, development and innovation in low-carbon technology, enabling sufficient availability (physical and financial) of alternative energy resources, as well as in carbon capture and storage, or re-absorption of CO₂ emissions, enabling to use fossil fuels without an increase in emissions. There is a risk that without technological innovation the efforts to comply with the greenhouse gas emission limits will result in slower economic growth.

⁵ “Carbon assets” mean assets relating to fossil fuels and intensive CO₂ emissions, e.g. equity of corporations whose profits are generated from coal mining. The decline in prices of carbon assets is based on the concept of the carbon budget as defined by the Intergovernmental Panel on Climate Change. The carbon budget basically states the volume of greenhouse gas emissions that can still be released to the atmosphere so that the global temperature does not rise by more than 2 °C. It can be determined in this context that, based on the current technological knowledge, it will be possible to utilise only around one-third of all fossil fuel reserves. In other words, around two-thirds of the reserves (according to some authors up to 88% of coal reserves, 52% of natural gas reserves and 35% of oil reserves) will not be utilised and will lose their value. As a result, the value of the related carbon assets will drop.

are based on the specific macroeconomic situation. For example, in August 2005 the US Fed [implemented](#) the expected rate increase despite Hurricane Katrina, as it assessed its macroeconomic impacts as being significant but basically only temporary, whereas the Bank of Japan eased monetary policy [in reaction to the large earthquake](#) in March 2011.

As the Bank of England points out,⁶ higher volatility of food prices, linked with more frequent extreme climatic phenomena, will also gradually require attention from central banks. Such events have a fundamental effect on the agricultural sector and thereby affect prices of agricultural products. Higher food price volatility will be reflected in higher variability of headline inflation. Central banks will have to deal with this in their monetary policies and communications to maintain sufficient credibility and keep inflation expectations firmly anchored.

Green investment

Investment is an important area where the financial sector may participate in the fight against climate change and the shift to a low-carbon economy. Some large financial institutions have recently undertaken to lower investment in the coal sector and increase investment in the renewable resources sector. However, the total volume of such “green” investment⁷ is still very low, accounting for just a fraction of banking transactions. Less than 1% of global bonds are categorised as green bonds. In this context, the International Energy Agency (IEA) estimates that investment of EUR 45 trillion will be needed on the global scale to comply with the global warming limit agreed in Paris.

To support development of ecological investment, the G20 established a study group on green finance ([GFSG](#)) chaired by the British and Chinese central banks. Its goal was to identify potential obstacles to green finance and, based on the experience of the member countries, seek out opportunities for mobilising private capital for green finance. The group’s [synthesis report](#) included recommendations on how to create clear rules for green finance, measure the effectiveness of green finance, facilitate sharing of information on ecological risks and support local and global green bond markets.

Besides helping to combat climate change, green investment could have a favourable effect on the global economy. If a large volume of the current excess of global capital is channelled into long-term ecological projects in developing countries (which currently rank on top in terms of carbon intensity of growth and will need about 70% of the total estimated volume of necessary investment), equilibrium interest rates and macroeconomic stability could increase on the global scale.

By contrast, the role of green government investment in the form of subsidies is unclear. In addition to possible market distortions, subsidies may eventually act in a discriminatory manner against correct ecological approaches, as recognised by the [OECD](#), which defined environmentally harmful subsidies. Its procedure for identifying such subsidies was further elaborated by the Institute for European Environmental Policy (IEEP), which [discussed](#) selected “green” subsidies and their impacts.

Conclusion – a need to take the long view

The impacts of climate change are beyond the horizon of those decision-making authorities which primarily monitor the economic cycle, the political cycle or the monetary policy horizon. However, with regard to the potential consequences of climate change, these authorities are

⁶ [BoE Working Paper 603](#), “Let’s talk about the weather: the impact of climate change on central banks”.

⁷ The terms “green” investment or “green” finance encompass funding of projects beneficial to the environment in accordance with sustainable development. Such projects include e.g. efforts to reduce air, water or soil pollution, decrease greenhouse gas emissions, increase the energy efficiency of the use of existing natural resources, mitigate the impacts of climate change and adapt to it. Green finance covers both public and private funding.

already starting to deal with this topic today. The fight against climate change and implementation of the necessary changes is the responsibility of governments. The role of central banks will be to make sure that the financial system is resilient enough during these changes and create a suitable framework to help market participants adjust effectively. This should be ensured by availability and transparency of information on the impacts of climate change on market participants. Such information will also facilitate the assessment of the ability of financial institutions to cope with climate change. At the same time, the financial system and other authorities must prepare for an expansion of investment in low-carbon technology. The switch to a low-carbon economy and greater use of renewable resources is not easy and results will take long to become visible. However, it is clear that if the switch starts early – and therefore is gradual and predictable – the market can adjust. This is the path chosen by the Paris agreement and supported by many central bankers in their speeches.⁸

⁸ Speeches on this topic were delivered e.g. by the Governor of the Bank of England Mark Carney ([September 2015](#), [September 2016](#)), the Governor of the Banque de France Villeroy de Galhau ([November 2015](#)) and the Governor of the Bank of Finland Erkki Liikanen ([March 2016](#)). The topic was also discussed e.g. by the Dutch central bank ([March 2016](#)).

4. SELECTED SPEECH: BANKS' BUSINESS MODELS AS SURVIVAL STRATEGIES FOR DIFFICULT TIMES

The challenges facing banks in Germany and elsewhere and possible ways of adapting to them were outlined by Andreas Dombret, Member of the Executive Board of the Deutsche Bundesbank, in his [speech](#) at the Bavarian Financial Summit in Munich in October 2016.

Andreas Dombret starts by comparing the German banking sector to giant pandas, which have long been on the verge of extinction. Recently, however, the UN has reported that their survival prognosis had improved and they were now "just" an endangered species. Dombret sees the situation of banks now, eight years after the financial crisis, as being similar. Despite all the prophecies of doom, banks are not currently facing the question of survival. Moreover, positive signals are indicating their better preparedness for the future. Still, banks could well be put onto the list of endangered species if they fail to adapt to the new environment.

The central question is whether banks will continue to earn enough money to be resilient and stable. Opinions are divided, however, on the issue of how to solve the difficulties facing the European banking sector. One side argues that banks must radically alter their business models, while the other side argues that this will not be enough to end the sector's plight and that further market consolidation is needed, which means a further reduction in volume in the banking and financial system. Dombret believes that the truth lies somewhere in between. In his opinion, the banking sector did not sufficiently avail itself of the initial stabilisation provided by monetary and fiscal expansion. Although institutions considerably improved their solvency and liquidity and some of them made considerable efforts to restructure, unsustainable strategies have not yet been changed in many cases. Complaining about allegedly over-strict regulation, as Dombret remarks, only distracts from the actual problems faced by the financial system. However, massive challenges arise from the fact that we are in the middle of an economic climate change connected with four important aspects from banks' point of view.

First, there is the risk of an economic downturn. There is much talk about whether the era of ever-increasing economic prosperity is over. Nevertheless, the banking sector should bear in mind that the comfortable economic situation associated with low credit default rates is not self-evident. Thus, institutions must act before an economic downturn sets in, even if there are no signs of that at the moment. The second challenge facing the banking sector is demographic change. The ratio of employed persons to non-employed persons is declining steadily and the low birth rates bring no prospect of improvement. For banks' business models, this entails enormously demanding changes reflecting a dwindling population, smaller economic growth overall, a higher savings rate and less investment and consumption. The sector is already facing strong headwinds from the third challenge – the low-interest-rate environment – which is eroding the profitability of interest-focused business models. Net interest income can no longer be the basis of operating profit. Since the interest rate level will probably remain low for a long time, institutions have to rethink their business models enormously. The fourth challenge is digitalisation. Although this is not new, it has now developed into a mass phenomenon influencing, among other things, customer expectations. It also brings new competition to the banking market in the form of institutions offering intermediate services formerly included in the package of services of traditional banks.

Dombret sees the way out of the banks' difficult situation in their return to sound business models orientated to customer needs, and setting realistic earnings targets geared to continuity. But it is likely that the sector's problems can only be solved by a triad of measures: increasing efficiency, which can be assisted by digitalisation, renewal of business models to adapt them to the new economic environment, and a moderate scale-back of capacities in the banking sector and its adjustment to customer demand. The result of these changes should be a sector whose capacities and structure meet the needs of the real economy.

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