

# Sharon Donnery: Risks and opportunities from climate change

Address by Ms Sharon Donnery, Deputy Governor of the Central Bank of Ireland, to the Department of Finance and Sustainable Nation Ireland Conference, Dublin, 16 May 2019.

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## Introduction

Good evening, I am delighted to speak to you today<sup>1</sup>.

Last week, the Central Bank of Ireland held an event with former President Mary Robinson. She gave an inspiring speech<sup>2</sup>. In her remarks, she asked three things of us all:

- ♦ First, to take climate change personally.
- ♦ Second, to get angry and get active.
- ♦ Third, to imagine the world we need to get to in a hurry<sup>3</sup>.

Individually, it can often seem our actions have only a limited effect. Think of recycling for example. Can an individual or household really make a difference by taking recycling seriously?

Well, reassuringly, the answer is yes.

Recycling efforts in the UK for example have reduced annual carbon emissions by between 10 and 15 million tonnes<sup>4</sup>. This is equivalent to 10% of transport related emissions. Or taking 3.5 millions cars off the road.

Individually the evidence shows that if we take things personally, we can all make a difference. This includes central banks themselves, which I will come back to later.

It really has been wonderful to meet so many people at today's conference who indeed take climate change personally and take that individual responsibility seriously. So personally in fact – that many of you have made a profession of it. And I think the Department of Finance and Sustainable Nation Ireland need to be commended on today's initiative, and their activity on this important issue.

Speaking to us last week, former President Robinson also asked something specifically of central banks. To be more explicit in our warnings about the risks posed by climate change.

In my remarks today I will try and take up this challenge. I will also address specific areas where I believe central banks can truly make a difference and indeed take a leading role.

Gillian Tett wrote an article in the Financial Times last month stating that “activists do not always turn up wearing tie-dye and throwing stones. Sometimes they wear boring grey suits and use dull central bank blogs as their weapon of choice”<sup>5</sup>. I think that is true.

Given the potential far-reaching consequences of climate change – not least economic and financial – central banks are rightfully taking a greater interest. The Central Bank of Ireland is after all here to ensure that the financial system operates in the best interests of consumers and the wider economy.

If global savings are to truly be channelled into advancing sustainability goals, central banks can play a role. We can help design the appropriate framework for disclosure and investments as a public good, for example.

A functioning financial system is necessary to act as a catalyst for change. In this context,

externalities and risks need to be correctly priced. Climate change needs to be factored into:

- ♦ How we think about supervising banks and insurers;
- ♦ How the investment fund industry operates; and
- ♦ How interlinkages across the financial sector might amplify climate risks.

I will address some of these issues in my remarks today.

## **The risks to the financial system**

As I mentioned earlier, in addition to taking climate change personally, we have been told to get angry and get active. Now central banks should probably not get angry. But we can certainly get active<sup>6</sup>. Particularly when we see risks building in the financial system.

Climate risks are unusual for a number of reasons<sup>7</sup>. First, the effects are broad-based in nature. They affect all types of economic actors, sectors of the economy and regions.

Second, there is a very high degree of certainty that these risks will crystallise at some point in the future. But, at the same time, the precise horizon, nature and indeed scale of these risks is highly uncertain because of potential 'tipping-points' for example.

Third, the time households, companies or governments for example have to plan to manage these climate-related risks is probably longer than their typical planning cycle<sup>8</sup>.

Finally, climate related risks affect everyone – governments, companies and households, across countries and continents. Mitigating these risks requires co-ordination between everyone. And not just at a single point in time. But sustained, concerted, and effective coordination over many years to come.

## **Physical risks**

While climate change is highly unusual as a source of risk to the financial system, recent efforts mean that there is a growing consensus over the channels through which climate change can affect the financial sector<sup>9</sup>. Broadly, there are two categories of risks.

First, 'physical risks' and second so-called 'transition risks'. When we think about physical risks – you don't have to flick through too many channels to see news reports of heatwaves, landslides, floods or storms. The economic cost and financial losses from more frequent and more severe extreme climate change-related weather events are already evident. Longer-term structural shifts in our environment such as rising sea levels, growing weather variability, or changes in precipitation are all leading to physical risks. Natural disasters are occurring nearly five times as often today as they were in the 1970s<sup>10</sup>.

The cost of these events has been stark. Globally, between 1970 and 2012, over 1.9 million lives have been lost and economic damages of 2.4 trillion USD suffered<sup>11</sup>. Storms and floods accounted for nearly 80 per cent of the total number of disasters, caused over 50 per cent of deaths, and 84 per cent of economic losses<sup>12</sup>.

The most direct link from physical risks to the financial system is through the insurance sector. Insurance companies cover losses when these physical risks materialise. For example, 2017 recorded the highest insured losses ever for natural disasters, at 138 billion USD<sup>13</sup>. This risk of distress in the insurance sector will be bigger if insurance companies are unable to appropriately price and manage climate-related risks.

This is complicated by the extent that models rely on historical data to assess the risk of

catastrophe. With climate change, the past is unlikely to be a good guide to the future.

The dynamics of climate change also present a major challenge to modelling future impacts<sup>14</sup>.

Distress of insurers could in turn affect the financial system as a whole. This could occur through the interconnections with other parts of the financial system – like banks for example. Or it could occur through the impact of behaviour on asset prices.

But there is another manifestation of climate-related physical risks – a collective withdrawal of insurers from covering risks that they consider uninsurable.

The International Association of Insurance Supervisors (IAIS) shows that the insurance ‘protection gap’ for weather related losses is already significant, with roughly 70 per cent of losses uninsured in 2017<sup>15</sup>. This raises risks of its own. If households and businesses cannot insure themselves against some of the physical risks, they will bear all the costs of climate-related shocks. This reduces resilience. Households and businesses may not be able to access finance in the first place, if investors judge that the risks stemming from climate-related events are too high. And it means that – when climate related shocks hit – the economic impact will be larger, due to underinsurance.

Take the simple example of property. Households and businesses often use property as security for borrowing. If climate-related events hit – and households and businesses are underinsured – this will directly affect their net worth. This will in turn reduce their ability to borrow and fund investment and spending. It will affect the value of property. And it will affect the quality of the loan portfolios of banks.

What does all this mean for Ireland?

Take insurance first. Our insurance sector is very international. For example, 80 per cent firms operating here conducted underwriting business in the European Economic Area (EEA) (excluding Ireland) in 2018. A substantial number of firms also operate further afield, outside the EEA. The value of premiums underwritten outside of Ireland was significant, accounting for 73 per cent of the total value of underwriting in 2018. The Irish insurance sector is exposed to shocks from across the globe.

And what of banks?

Irish banks are heavily exposed to property. As are households and businesses. Property-related lending, for example, accounted for 68 per cent of the loan portfolios of Irish resident banks in the third quarter of 2018<sup>16</sup>, while the asset holdings of Irish households are also heavily focused on property – accounting for almost 70 per cent of household net worth<sup>17</sup>. So adverse weather events that affect property can affect several aspects of the economy and financial system.

## **Transition risks**

In addition to getting active, what of the third request? Imagining the world we want to get to is easy.

- ♦ A greener world with less plastic and ultimately – a low carbon economy without the devastating impact of climate change.

However, the journey to this world is not risk free. The risks I am referring to here are termed ‘transition risks’. Transition risks refer to:

- ♦ The impact of the adjustment towards a low-carbon economy; and
- ♦ The uncertainties related to the timing and speed of the adjustment.

With regard to timing, the sooner we start on this journey the better. The longer we wait, the greater the adjustment that will be required to meet our goals. The speed of this adjustment must also be managed.

As an economist, implementing a carbon tax seems like a sensible way to price in the externalities associated with high-carbon technologies and products. However, the implementation of such a tax must consider the capacity of the economy to switch to low-carbon products to be as effective as possible. Adjusting to a lower-carbon economy will involve changes in policy to encourage shifts in consumption and investment. This will have implications for both economic activity and asset prices.

The expectations of economic agents regarding the timing of transition will also play a role, affecting, for example, the relative pricing of high- and low-carbon assets. Through those channels, the adjustment will affect the financial system. Overall, it is unclear if the market is placing enough weight on the potential for these costs and pricing them correctly.

I believe two things are abundantly clear:

1. The costs of inaction will be much greater than the cost of action;
2. The path of adjustment matters.

A timely, orderly, predictable, scenario would allow sufficient time to adjust. A disorderly or sudden transition would clearly be costly and disruptive.

### **Opportunities for the financial sector**

To summarise so far, we can all take climate change personally and central banks are now getting active in thinking about how to address the risks on the journey to a better world that we can all imagine. Given the role of the Central Bank of Ireland in ensuring a resilient financial system, it is not surprising that I have focused quite a bit on risks from climate change. But that should not distract from the fact that these trends also bring significant opportunities for the financial sector.

Ensuring success will require technological innovation and investment. Indeed, the Intergovernmental Panel on Climate Change (IPCC) estimate that the world will need to spend around 900 billion USD annually until 2050 on energy-related mitigation investments if global warming is to be limited to 1.5 degrees<sup>18</sup>. For Ireland, last year's research from Sustainable Nation Ireland estimated that making the transition to a sustainable, low-carbon economy by 2030 will require €50 billion<sup>19</sup>.

This investment will cover a range of activities:

- ♦ Developing disruptive innovations, including some that we may not already have thought about.
- ♦ Expanding new types of infrastructures, including for clean sources of energy, not least given the potential increased cost efficiency of these.
- ♦ Adapting existing infrastructures, such as retrofitting existing homes and offices to make them more energy efficient.

The key point is that this investment will need to be financed. And, while there is a role for public investment, a significant part of the adjustment will fall to the private sector. This is where the opportunity for finance lies. To meet this challenge, the financial sector will need to innovate – just like the rest of the economy. The financial sector has a long history of innovating to meet the needs of its clients: from the ATM to the digital wallet. Innovations we've seen around green finance are just one dimension of how the financial sector is responding to this challenge.

Since the first green bond issued by the World Bank in 2008, the green bond market has continued to gather pace. In 2018, issuance stood at around 170 billion USD, almost four times higher than in 2015. Last year also saw inaugural sovereign green bond issues from five countries, including Ireland<sup>20</sup>. But green finance will need to be bigger than that – it will need to be mainstream<sup>21</sup>. There is clearly demand.

What can central banks and policy makers do to facilitate the growth of sustainable finance?

Broadly speaking, we can contribute to creating an environment where climate related financial risks can be more efficiently assessed and considered. This will facilitate the channelling of savings into the investment needed to make the climate transition a reality. There are some key areas where we can make a difference.

First, we need clarity over what constitutes a sustainable investment. We need a common understanding of what disclosures actually mean and definitions of sustainable financial products. The European Commission has taken steps towards this goal with its action plan for sustainable finance. This addresses the development of regulations for a common taxonomy, investor disclosures and low-carbon benchmarks. As part of the European System of Financial Supervision, the Central Bank of Ireland has contributed to this work on sustainable finance through the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA). Both authorities provided technical advice to the European Commission earlier this month on the integration of sustainability risks and factors<sup>22,23</sup>.

Second, transparency is required to allow investors to make informed decisions. The work of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD) has resulted in recommendations for voluntary disclosure of material climate-related financial risks<sup>24</sup>. The financial system must take advantage of these developments and adjust the services provided to clients accordingly.

### **Taking it personally and getting active – the role of the Central Bank of Ireland**

To conclude, I would like to briefly discuss how the Central Bank of Ireland is taking climate change personally and getting active. We have an explicit mandate in domestic and European legislation to contribute to financial stability in Ireland and at euro area and EU levels. We also provide independent economic advice. We plan to incorporate considerations related to climate change in our macroeconomic and financial stability assessments moving forward. For example, climate-related stresses can be incorporated into sector or market-wide stress tests<sup>25</sup>.

In addition, in our role as regulator and supervisor of the financial system, we will continue to participate in the design of such regulatory rules and supervisory frameworks at European and global levels. We will also continue to collaborate and coordinate with the international community of central banks and financial regulatory authorities in implementing our climate change work programme.

Our work is wide-ranging. From revisions to the regulation of financial markets, investment firms and the asset management industry, to the assessment of climate-related prudential risks facing the banking and insurance sectors. We also must consider the implications for financial products such as mortgages, insurance policies and investment funds, given our consumer protection role<sup>26</sup>.

In managing our investment portfolio, environmental, social and governance (ESG) criteria are taken into account. In particular, the equities component of our investment portfolio is managed in line with ESG criteria: compliance with the UN-supported Principles for Responsible Investment (PRI) was a condition in allocating the mandate for this portfolio. In relation to the bond

component of our investment portfolio, an ESG policy for this asset class is currently in preparation. Already, the Central Bank holds eleven green bonds (€271 million) in our investment portfolio. As part of the public sector purchase programme component of the European Central Bank's monetary policy measures, we also hold six green bonds (€258 million).

In terms of our own carbon footprint, the construction of our new headquarters on North Wall Quay provided an opportunity to design a building that was energy efficient, had low operating costs with a healthy and ambient indoor environment for our staff. It is the first office building of its size in Ireland to achieve a BREEAM rating of 'Outstanding' and a Building Energy Rating of A2<sup>27</sup>.

Central banks will continue to engage with other policy makers to address this issue.

One forum that is particularly important for us is the Network for Greening the Financial System (NGFS). A new coalition of central banks and supervisors has come together under the auspices of the NGFS to ensure that the financial system is resilient to climate related risks. The Central Bank of Ireland is a member of this group, and we will do our part to better understand and address the link between climate-related risks and the financial system and to put in place the right policies and protections to guard against these risks and to foster a greener financial system.

The challenge that we all face from climate change is immense. In line with our mandate to assess all risks to financial stability and to provide independent economic advice, the Central Bank of Ireland necessarily takes a long view. Given the uncertainty I discussed around climate-related risks, this long-term view is essential. Central banks must always be cognisant of the longer-term costs associated with action, or inaction. We all must play a part in meeting this challenge.

The mission of the Central Bank of Ireland is to serve the public interest by safeguarding monetary and financial stability and by working to ensure that the financial system operates in the best interests of consumers and the wider economy. So, we are taking it personally, we are getting active and we are imagining both the world we need to get to and how we get there<sup>28</sup>.

Thank you.

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<sup>1</sup> I would like to thank Yvonne McCarthy, Vasileios Madouros, Paul Reddan, and Micheál O'Keeffe for their assistance in preparing my remarks.

<sup>2</sup> Central Bank of Ireland: [LinkedIn](#) (10 May 2019).

<sup>3</sup> Robinson, Mary: [Climate Justice: Hope, Resilience, and the Fight for a Sustainable Future](#), Bloomsbury Publishing (2018).

<sup>4</sup> The Economist: [Case Study: The truth about recycling](#), Technology Quarterly (2007).

<sup>5</sup> Tett, Gillian: [Central banks are finally taking up the climate change challenge](#), Financial Times (25 April 2019).

<sup>6</sup> Lane, Philip R.: [Climate Change and the Irish Financial System](#). Central Bank of Ireland Economic Letter, Vol. 2019, No.1 (2019).

<sup>7</sup> Network for Greening the Financial System. [A call for action: Climate change as a source of financial risk](#) (2019).

<sup>8</sup> Carney, Mark: [Breaking the tragedy of the horizon – climate change and financial stability](#), Lloyds London (29 September 2015).

<sup>9</sup> Network for Greening the Financial System: [A call for action: Climate change as a source of financial risk](#) (2019).

Also European Systemic Risk Board: [Too late, too sudden: Transition to a low-carbon economy and systemic risk](#). Report of the Advisory Scientific Committee (2016).

Also Lane, Philip R.: [Climate Change and the Irish Financial System](#). Central Bank of Ireland Economic Letter, Vol. 2019, No.1 (2019).

<sup>10</sup> World Meteorological Organization: [Atlas of Mortality and Economic Losses from Weather and Climate Extremes 1970–2012](#) (2015).

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> International Association of Insurance Supervisors: [Issues paper on climate change risks to the insurance sector](#) (2018).

<sup>14</sup> For example, uncertainties, non-linearities and potential cliff effects could prove difficult to model.

<sup>15</sup> International Association of Insurance Supervisors: [Issues paper on climate change risks to the insurance sector](#) (2018).

<sup>16</sup> Central Bank of Ireland: [Systemic Risk Pack](#) (March 2019).

<sup>17</sup> Central Bank of Ireland: [Quarterly Financial Accounts](#).

<sup>18</sup> Intergovernmental Panel on Climate Change: [Special Report: Global Warming of 1.5°C](#) (January 2019).

<sup>19</sup> Sustainable Nation Ireland: [Private Sector Financing for Sustainable Infrastructure, Meeting Ireland's 2030 Decarbonisation Objectives](#) (2018).

<sup>20</sup> Carney, Mark: [A New Horizon](#), European Commission Conference (21 March 2019).

<sup>21</sup> Ibid.

<sup>22</sup> ESMA: [ESMA submits technical advice on Sustainable Finance to the European Commission](#) (3 May 2019).

<sup>23</sup> EIOPA: [EIOPA submits advice on Sustainable Finance to the European Commission](#) (3 May 2019).

<sup>24</sup> Task Force on Climate-Related Financial Disclosures: [Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures](#) (2017).

<sup>25</sup> Network for Greening the Financial System: [A call for action: Climate change as a source of financial risk](#) (2019).

<sup>26</sup> Cross, Gerry: [Accountability and sustainability: key themes in financial regulation](#). ICSA Ireland Conference 2019 (16 May 2019).

<sup>27</sup> The Building Research Establishment Environmental Assessment Method (BREEAM) is an international independent benchmark to measure and verify the sustainability credentials of a building. The Bank operates an energy management system at each of its sites, to the ISO 50001 international energy performance standard.

The results are already evident: a 20 percent reduction in energy consumption at our currency centre since March 2017. This is equivalent to over 1.4 million kilowatt hours, 402 tonnes of carbon dioxide or a saving in excess of e97,000. In 2018, we reduced electricity consumption at the North Wall Quay building by twenty five percent compared with 2017, equivalent to almost one million kilowatt hours, 520 tonnes of carbon dioxide or an annual saving in excess of e119,000 . (Since the NWQ building was commissioned in 2017, it would not be considered a baseline for “normal” operations. The CO2 conversion factors are different for gas and electricity, hence the varying results from the different ratios of resource use at the two sites.)

<sup>28</sup> Robinson, Mary: [Climate Justice: Hope, Resilience, and the Fight for a Sustainable Future](#), Bloomsbury Publishing (2018).