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## Sustainable development and climate risks: the role of central banks

Speech by Ignazio Visco  
Governor of the Bank of Italy

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First of all, let me thank the conference organizers for setting up this important event and for their kind invitation. Today's remarks are partly based on a speech that I gave in May at the Italian Alliance for Sustainable Development (ASVIS).

I would like to start by noting that the issue of the compatibility between natural resources and the development goals of nations has been studied since at least the end of the 18<sup>th</sup> century, with the works of Thomas Malthus on food supply and population growth. It has then re-emerged a number of times in the public debate.

The less young among us may recall, for example, the simulations produced for the project of the Club of Rome on the "Predicament of Mankind" – *The Limits to Growth* – in the early 1970s. These simulations came in the wake of a worldwide demographic explosion and set off a global alarm signalling the risks to the survival of our ecosystems and of the human race itself. At that time, it was observed that the depletion of natural resources resulting from the simulations, largely based on the extrapolation of the trend under way, did not take sufficient account of two important mechanisms that regulate the functioning of the economy: the rebalancing power of prices and the endogenous nature of technological change. When the resources used in production become scarcer, an increase in prices discourages demand; at the same time, higher prices provide an incentive to search for new production methods that utilize fewer of those resources.

Over the last few decades, the biggest concern has been in relation to the effects of climate change. Is this concern different from that of the past? One key difference compared with the issue of the depletion of natural resources is that, in the case of climate change, there are no "natural" market prices. Climate change is, in fact, a classic example of a negative externality: a cost that spills over onto other markets besides the one in which it originated. In addition, as pointed out by William Nordhaus in his Nobel

lecture, climate change is a particularly thorny externality owing to its global nature, which puts it outside the domain not only of markets but also of national governments.

The dangers of climate change, its close link with the emissions of greenhouse gases (including, but not limited to, carbon dioxide) and, in turn, with the human activities of production and consumption, have all been known for some time. For example, Professor Nordhaus himself, who wrote a sharp criticism of the results of the Club of Rome almost 50 years ago, now regards climate change as “a major threat to humans and the natural world” – a concern that is hard not to share. Since his pioneering studies in the mid-1970s on how the climate and the economy co-evolve, which earned him the 2018 Nobel Prize in Economic Sciences, the trend in the emissions of greenhouse gases has continued to be worrisome. In fact, the growing use of fossil fuels is pushing greenhouse gas concentrations to levels that, unless forceful measures are taken, is estimated to lead to an increase in the temperature of the planet ranging from 3 to 5 degrees Celsius by the end of this century. This is well beyond the threshold of 1.5 degrees that, if surpassed, would bring potentially catastrophic consequences for our planet, according to the United Nations Intergovernmental Panel on Climate Change.

Some effects are already evident. At the global level, the last four years have been the warmest since 1880; last July was the hottest month on record for our planet. In Italy, the year 2018 recorded the highest average temperature of the past two centuries (the period for which reliable data are available) and 2017 was already characterized by a significant intensification of extreme weather events, with severe cases of drought that had serious repercussions on the water supply.

Stopping climate change will require not only a strong political determination and a firm commitment by all countries, but also sustained efforts by all institutions and individuals. Achieving this objective is first and foremost a responsibility of national governments, the only institutions that can provide incentives to allocate capital to “green” investments, levy taxes on carbon emissions, and introduce regulations limiting the amount of allowable emissions. Reaching international agreements on a global carbon tax or on shared targets for emissions also rests within their powers.

The difficulties in reducing emissions sufficiently across countries are enormous, as has been evident in the last few years. Therefore, all institutions and individuals should play their part to foster economic growth that is “sustainable” – i.e. that meets current needs without compromising those of future generations (as defined by the UN “Brundtland Commission” in 1987). Public institutions could promote sustainable business practices by envisioning strategies that induce firms to take into account the environment, human rights, consumer rights and diversity, as well as best practices in corporate governance – the so-called Environmental, Social and Governance (ESG) profiles.

Firms that are successful in adopting appropriate ESG profiles and in adjusting their investments accordingly can expect significant advantages. In fact, the “green” sectors are steadily growing around the globe and in Italy as well. The available data show that the “eco-industrial” sector expanded markedly in our country in recent years: in 2017

it contributed 2.3 per cent to total value added, employing nearly 400,000 full-time equivalent workers.

Given its central role in the allocation of resources, the financial sector can be key in influencing the scope, speed and smoothness of the transition to a low-emissions economy. However, it can only do so effectively if banks and other financial intermediaries integrate sustainability in their investment decision-making processes, especially in their corporate governance systems and in their risk management and investment strategies.

Several challenges, however, lie ahead. Currently, there are neither widely accepted rules for ESG data disclosure by individual firms nor agreed auditing standards to verify the reported data. Moreover, there are intrinsic difficulties in deciding which indicators are relevant in assigning an ESG score – think, for example, of the problem of evaluating the “social” component – especially when compared to financial aggregates, where the key indicators, such as revenues, costs, earnings and cash flows, are widely available and are all auditable items. Apparently, ESG-score providers rely heavily on voluntary disclosure by firms and on subjective methodologies to select, assess and weight individual ESG indicators. This, of course, adds to the arbitrary nature of the scores. As a result, ESG scores of individual firms differ greatly across rating agencies if compared, for example, with credit ratings. According to our studies and in line with the existing literature, the correlation between the ESG scores assigned to the major listed companies in the euro area by three of the main providers ranges from 40 to 60 per cent, compared with a correlation between credit ratings that is over 90 per cent. There is also evidence of significant biases in ESG scores, which tend to overrate the companies that are larger and belong to specific industrial sectors and geographic regions.

Central banks may play their part. First of all, with respect to the methodology, they can help to raise awareness and nurture a better understanding of the risks related to the sustainability factors and the channels through which they are transmitted to the financial system. The objective is to make financial intermediaries move from a backward-looking approach to a forward-looking one, prompting them to evaluate the return on their assets over a longer horizon, which entails making assumptions and building scenarios. In this respect, it is important to foster cooperation and the sharing of best practices between the various stakeholders in the financial system, including academia.

Secondly, central banks can promote the dissemination of more and better information to bridge the current gaps in the quality, consistency and comparability of available data. Important contributions will be provided by the recommendations of the Financial Stability Board’s Task Force on Climate-related Financial Disclosures and by the taxonomy and the transparency obligations that are being developed within the European Commission’s action plan on sustainable finance. These initiatives point to the setting of standards that, when widely adopted, will facilitate the disclosure of companies’ exposure to environmental risks and the measurement and management of climate-related risks by financial intermediaries. They can also limit the risk of “green washing”, i.e. the unfair use of the “green” label for production activities and financial investments intended to mislead potential customers. This risk is likely to increase with the demand for environmentally safe assets. Improvements in the standardization of

data and methodologies will also help to achieve sounder approaches in the issuance of ESG ratings.

Central banks can also support the transition to a low-carbon and sustainable growth by leading private investors by example, through the adoption of suitable policies for managing financial resources and the related risks. In this regard, let me describe the recent decisions taken by the Bank of Italy as portfolio manager.

This year the Bank has adopted a new investment strategy that integrates ESG factors into the management of its equity portfolio, as described in detail on our website. The principles of diversification and market neutrality already embedded in our previous strategy have been preserved and two ESG criteria have been added. The first discards companies that belong to the sectors, controversial weapons and tobacco, excluded by the United Nations Global Compact (an initiative that requires CEOs to commit to ten sustainability principles in the areas of human rights, labour, the environment and the fight against corruption as well as to take steps to support UN goals). The second gives preference to companies with the best ESG scores, according to the assessment of a carefully selected data provider. As we are aware of the current limits of ESG data, we have done everything we can to make this approach as robust as possible.

The resulting portfolio achieves a significant improvement in its environmental footprint. Compared with the composition of the old portfolio, the shareholdings included in the new portfolio are characterized by much lower greenhouse gas emissions (down by 23 per cent) as well as by lower energy and water consumption (by 30 and 17 per cent respectively). These calculations rely on the data disclosed by the companies and, when these are not available, on those estimated by ESG-score providers.

Our new investment strategy was adopted after considering and comparing various alternatives. In general, we have found that improving the overall ESG score of the portfolio by dropping the companies with the lowest scores comes at the expense of a slight increase in the ex ante tracking error vis-à-vis the market benchmark, which comprises all the listed non-financial corporations in the euro area. This finding is in line with other empirical studies and with the theoretical argument that constraining diversification opportunities increases the divergence from the standard market benchmark.

The effect on the tracking error does not undermine the risk-return profile of our portfolio, mainly because, by filtering for the higher ESG-scored companies, the idiosyncratic component of the portfolio risk tends to diminish. A backward test over a ten-year horizon shows that our new portfolio would have provided, ex post, a better average annual performance in terms of both lower risk and higher return, thereby implying a higher Sharpe ratio compared with the previous portfolio and the market benchmark.

The fact that sustainable investment does not appear to penalize financial performance is not necessarily surprising. Several studies confirm that sustainable investment leads to risk-adjusted market returns that are often higher than those achieved using traditional financial models. These empirical findings may be due to a number of factors. First, the ESG risk may have been underestimated in the past, while investors may

have not anticipated the higher returns due to the faster-than-average growth of the green sector. Second, in its practical implementation, the traditional risk-return model uses historical time series, which make it backward-looking, whereas the sustainability assessment implies a forward-looking view and, in particular, a long-term view, which could help to mitigate the “short-termism” that usually drives financial investments. Third, good ESG practices seem to provide firms with a competitive advantage stemming from innovation; they also contribute to reducing operating, legal and reputational risks and lead to a more efficient resource allocation (as resources can be shifted from risk management to productive activities), lowering the cost of capital and fostering better operational and market performance.

Empirical studies carried out by the Bank of Italy have provided clear evidence of a return premium on the shares of European electricity utilities with lower carbon emissions. Historical experience has offered many examples showing that reputational risks and serious losses for firms and shareholders can arise from business practices that are inappropriate when viewed through the lenses of ESG.

As I mentioned, our new portfolio was built in a way that preserves, in particular, the principle of market neutrality. It may be inquired, however, whether this principle should be fully preserved or be “adjusted” in a context in which, in the absence of further regulation, market forces are pushing greenhouse gas concentrations to levels that will soon be unsustainable. I believe that this is an important topic, which warrants further research.

A last point that I would like to touch on regards international cooperation. As a result of the increasing concerns about the consequences of climate change, cooperation in the field of sustainable finance has been strengthened, with several initiatives promoted by institutions and industries.

In our role as members of the Financial Stability Board, we have discussed the studies of the Task Force on Climate-related Financial Disclosure and we have contributed to those of the G20 Green Finance Study Group. We also participate in the new Network for Greening the Financial System, which brings together 42 central banks and supervisors and 8 observers from countries responsible for half of the world’s greenhouse gas emissions. Last April the Network released its first report with a list of recommendations on how central banks and supervisors may contribute to the achievement of the Paris objectives. The Network is currently studying, with our active contribution, possible ways to integrate environmental and climate risks into central banks’ portfolio management strategies as well as into micro and macro-prudential supervision.

In Europe, the Bank of Italy – together with the other national supervisory authorities – cooperates with the European Banking Authority in studying the risks that sustainability factors pose to financial stability, drafting methodologies to assess these risks and identifying suitable prudential responses. We also take part in the analysis scheduled by the Single Supervisory Mechanism, which has included climate change in its risk map for 2019.

In Italy, we provide technical assistance to the Italian Ministry of Economy and Finance for the negotiations on the legislative proposals resulting from the European Commission's action plan on sustainable finance. As part of the Italian Observatory on Sustainable Finance, established by the Ministry of the Environment, last year we conducted a survey of the main financial operators, finding that sustainability is mainly dealt with from a social responsibility point of view. Hence, more has to be done to raise awareness of the potential problems deriving from business strategies and risk management systems.

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Let me conclude by saying that the transition towards an economy with low carbon emissions is essential if we want to reduce the risks that climate change poses to our well-being. Central banks, supervisory authorities and the financial sector cannot stand in for those who can make the policies necessary to decarbonizing our energy systems, but they may offer their contribution to facilitate this process.

The Bank of Italy is playing its part. Although further progress is still needed to enhance the reliability of ESG ratings, we have started to introduce sustainability criteria in our investment policy, which is aimed at promoting corporate social responsibility and improving risk management. For the time being, our new investment strategy applies to equity investment; we are currently assessing the possibility of extending it to other asset classes, such as corporate bonds. As we keep working towards further improving the ESG profiles of our portfolio, we will provide regular reports on the results achieved, so that our best practices and our methodologies can serve as a reference for other investors. In our capacity as supervisory authority, we are actively committed to raising the awareness of the financial sector and of the public at large about these issues as well as to working jointly with other institutions to better understand how to measure and address these new risks.

It is in the interest of financial intermediaries to be fully aware of how sustainability factors can affect their activities: it would make it easier for them to take into account the corresponding risks in their strategies and governance, thereby helping to improve their performance. Central banks and supervisory authorities are working to prepare the financial system to face this transition. Greater use of green financial instruments will be fostered by the EU taxonomy of environmentally sustainable activities, the introduction of labelling schemes (especially the standards for green bonds), a wider uptake of the new low-carbon benchmarks, and the forthcoming application of the new rules on disclosure. All these factors will bolster data standardization and foster comparability.

Italian investors have expressed considerable interest in sustainable finance in recent years, but the supply is still not sufficient to satisfy demand. Companies that provide the necessary information on the sustainability of their activities will be able to exploit the room that seems to be available for the financing of their projects. By doing so, they will also contribute to the development of a green financial market, which is still in its infancy. The battle to arrest climate change is under way: winning it requires the effort of each of us. Thank you for your attention.

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