

1 **Mandatory disclosure is key to address climate risks***

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12 13 14 SUMMARY

15
16 The United States Security and Exchange Commission’s recent proposal to mandate disclosure of climate
17 risks has been the object of substantial debate, support, and criticism. We put the proposal into perspective,
18 while highlighting important aspects that have not received sufficient attention in public opinion. Mandatory
19 disclosure of climate-related financial risks, in particular transition risks, is key for three main reasons. It limits
20 firms’ ability to mislead the public by addressing selection in who reports and what, provides the basis for
21 climate stress tests by financial institutions or regulators, and creates the basis for potential policymaking to
22 address threats to the financial system.

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25
26 Last March, the United States Security and Exchange Commission (SEC) announced a proposal that would
27 require firms under its purview to disclose information about climate-related risks in their regular
28 reporting, updating rules dating from 2010. Currently, public firms in the United States insufficiently
29 report such risks to the public. The current regulations allow for some ambiguity on what risks are
30 “material,” a term that refers to the extent that they may potentially compromise an investor’s return,
31 or have “systemic implications,” which means that they may affect the stability of the entire financial
32 system.¹ We argue that there is a strong rationale to proceed with the SEC’s proposal and standardize
33 the way public firms report climate risks, including explicit measurement of greenhouse gas
34 emissions, and how they plan to address them.

35
36 In 2015, the then governor of the Bank of England, Mark Carney, highlighted three major climate-related
37 risks to the financial system: physical risks, transition risks, and liability risks.² The taxonomy
38 introduced by Carney has been the reference for the scientific community, including the
39 Intergovernmental Panel on Climate Change,³ and financial regulators.^{4,5}

40
41 Physical risks are the risks arising from damage to physical assets resulting from sea level rise or more extreme
42 weather events, including dry weather, or other consequences of climate change. Transition risks are
43 the risks to the value of existing assets from a transition away from fossil fuels. Liability risks are the
44 risks to companies and insurers from litigation for compensatory damages by parties that suffer

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45 damage because of climate change. At the present time, transition risks are the main focus of both
46 the academic literature and the policy debate, including the proposal by the SEC.

47 48 **TRANSITION RISKS** 49

50 Transition risks describe the potential for climate policy, technological change, or investor and consumer
51 preferences to sharply reduce future revenue streams of current assets. Late and abrupt policy
52 tightening of emissions would be especially financially damaging. Given that the carbon contained in
53 existing fossil fuel reserves exceeds the amount that can be burned before breaching the target of the
54 Paris Agreement, scientists have described part of these reserves and the associated production,
55 transport, and refining infrastructure as “stranded assets.”⁶ Hence, either humanity will emit more
56 than the “carbon budget” allows and face more severe climate damages or a substantial portion of
57 such reserves would have to remain in the ground (“stranded”), essentially losing their entire value.

58
59 Investors have known about climate change for at least three decades. Companies not disclosing climate risks
60 despite their materiality may be akin to misleading investors, calling for policy intervention. Further, a
61 reassessment of values to reflect fundamentals, including external effects that are generated when
62 burning fossil fuels, while entirely justified may represent a risk for the entire financial system, if the
63 latter is substantially exposed to the assets being stranded and the reassessment happens abruptly.
64 About 50% of the standard portfolio of an average European financial institution is exposed to
65 transition risks, once one considers as at risk not only fossil fuel companies, but also carbon-
66 intensive sectors such as agriculture, aluminum, or steel. Feedback effects within the banking system,
67 due to the fact that financial institutions own shares of, and lend to other financial institutions, can
68 further increase systemic risk.^{7,8} As we learned with the Great Recession, the realization of systemic
69 risk can lead to a painful recession and high unemployment levels.⁹

70 71 **KEY RATIONALES FOR MANDATORY DISCLOSURE** 72

73 The SEC’s proposal would require regulated firms to include, starting from 2024, new information related to
74 climate risks in their periodic statements, including current emissions, emissions targets, if any, and
75 plans to achieve them, as well as assessments of climate-related risks under transparent scenarios and
76 corresponding management strategies, including internal carbon prices. Reported emissions should
77 include scope 1 and scope 2 and, starting from large firms in 2025, scope 3. Scope 1 refers to
78 emissions occurring directly within the company, scope 2 refers to emissions from electricity
79 consumption, and scope 3 refers to emissions associated with the value chain, including suppliers,
80 workers’ commuting, and customers’ use of the product.

81
82 The key rationale for mandating the disclosure of climate risks is threefold. First, the proposal by the SEC
83 would standardize the reporting of transition risks, addressing the issue of selection into reporting
84 and non-reporting as well as into how much to report. These two aspects are intrinsically intertwined.
85 If companies are free to report only if they want, and what they want, as it is the case with voluntary
86 disclosure, the danger is that only a subset of companies does so and in a very selected fashion,
87 possibly providing a misleading picture of their risk exposure.¹⁰ Addressing this selection issue
88 ensures that material risks are properly disclosed so that investors and lenders can make informed
89 decisions, including financial institutions with systemic roles.

90
91 Second, over the last few years, many central banks and financial regulators have started engaging in so-called
92 “climate stress tests.” Stress tests of financial institutions were initially introduced in the 1990s, with
93 the Basel Capital Accord requiring banks to provide an internal assessment of their ability to sustain

94 an important, negative market event. Following the Great Recession, financial regulators started
95 running stress tests themselves to prevent future financial crises, assessing the exposure of the
96 financial institutions under their control to potential large market shocks. Only more recently they
97 have started considering climate policy as a market event potentially able to trigger a financial crisis.
98 More than one hundred central banks and financial supervisors make up the Network for Greening
99 the Financial System, whose goal is to provide recommendations for central banks related with
100 climate change, including on climate stress tests. To date, several institutions such as the Bank of
101 France, the Bank of England, the European Central Bank, and the Dutch central bank have already
102 completed their first round of climate stress testing. Members of the governing board of the Federal
103 Reserve Bank in the United States have also expressed interest in the idea. The more information the
104 regulator has about risk exposure, the more accurate a stress test can be. Hence the need for
105 mandated disclosure to compel companies to provide sufficient information so that regulators can
106 reliably assess systemic risks from climate change.

107
108 Third, climate stress tests can highlight the potential for systemic risk, but “macroprudential” policy might be
109 necessary to address it, unless one can count on financial institutions to do so themselves. A
110 common tool is minimum capital requirements. To ensure financial sector stability, banks are asked
111 to provide a sufficient amount of equity in proportion to size and riskiness of the banks assets.
112 However, current regulatory frameworks do not directly consider climate-related risks when setting
113 capital requirements. Thus, one policy that would be effective in tackling transition risk is to set
114 differentiated capital requirements depending on a bank’s exposure to climate risks. In essence, this
115 policy would ask financial institutions largely exposed to transition risks to keep additional capital as
116 a buffer.

117
118 Such differentiated capital requirements have been considered by financial regulators in several countries but
119 have not yet been implemented. To do so, financial regulators would need to know how exposed
120 financial institutions are to transition risks. Once more, mandatory disclosure would be crucial. The
121 possible scenario of such macroprudential policy might have contributed to some of the backlash
122 against the SEC’s proposal from actors that currently benefit from the insufficient pricing of such
123 risks. In this respect, it is important to keep in mind that addressing systemic risk is part of financial
124 regulators’ mandate. Macroprudential policy would be used to prevent systemic risk and pave the way
125 for ambitious climate policy, which is highly necessary. It would also protect the economy from the
126 impact that disruptive technologies or behavioral changes could have, shifting demand away from
127 fossil fuels. While gradual changes may give financial institutions some time to adapt, both
128 technological and behavioral change can take place in unexpected ways.

129 130 **MANDATORY DISCLOSURE AT THE GLOBAL LEVEL**

131
132 Mandatory disclosure already exists in some contexts. Large carbon emitters, for instance, may need to report
133 their emissions to environmental regulators. It is the case, for instance, in the United States, where
134 some 8,000 high-emitting facilities report since 2011 to the Environmental Protection Agency under
135 the Greenhouse Gas Reporting Program. The stated goal of the program is to allow firms and the
136 public to track and compare emissions and identify opportunities to reduce them.

137
138 However, the United States does not have a policy requiring all large, public firms to homogenously report
139 their emissions for reasons related to transition risk. Hence the proposal by the SEC. Several other

140 countries have policies in place with similar objectives, including France, Japan, New Zealand, and
141 the United Kingdom, with several more currently in consultation. Most of these policies and policy
142 proposals follow the recommendations from the Task Force on Climate Related Financial
143 Disclosures,¹¹ an initiative by the Financial Stability Board, an international organization created by
144 G20 countries with the goal to monitor the global financial system. Additional standards were
145 proposed this year by the International Sustainability Standards Board to foster consistent
146 disclosure.¹² These standards aim to set the stage for future mandatory disclosure, including scope 3
147 emissions, which is the direction taken by the SEC as well.

148
149 With its proposal, the SEC would have the United States join these pioneers of mandatory and bring its
150 policy into close alignment with the abovementioned international guidelines and standards. The
151 SEC’s proposal would apply to the largest economy with the most liquid stock market in the world
152 and likely influence other countries as well, contributing to bring greater consistency in how
153 mandatory disclosure takes place. The insufficient, incomplete, and inconsistent information about
154 climate risks is indeed largely a global issue.¹³

155 156 **IMPLICATIONS FOR POLICY AND RESEARCH**

157
158 We consider the following avenues for future research as paramount in this context. First, industrial
159 ecologists need to keep expanding their ability to measure the emissions in firm’s value chains and
160 make recommendations on how to improve reporting standards to ensure a precise measurement of
161 carbon footprints, including harder to measure scope 3 emissions. This issue is especially relevant for
162 financial institutions and the emissions that they enable via investments and loans. Industrial
163 ecologists can also identify exposure to markets where prices are shaped by carbon-intensive inputs
164 (such as electricity) or industries that depend on inputs instrumental for climate mitigation (such as
165 indium in solar cells or nickel, cobalt and lithium in electric batteries). Lessons from research should
166 also feed in into the development of reporting standards by organizations such as the GHG
167 Protocol, making reporting more practical as a way to reduce resistance to its use. Second, scientists
168 should keep improving our understanding of physical risks, including from yet uncertain climate
169 forcers, as well as the implications of biodiversity losses. Economists have then the task of further
170 understanding the implications of physical risks for the economy, including by accounting for
171 financial and trade flows across countries, and the implications of transition risks, including
172 understanding the effects of timing of regulation and changes in market beliefs, building on a
173 growing literature in climate finance, which should also expand to better measure the extent to which
174 investors may be willing to align with long-term climate goals. Research in this area also has key
175 implications for the conduct of monetary and macroprudential policies, and the role of such policies
176 in facilitating a smooth transition to a low carbon economy. Third, researchers engaging in policy
177 evaluation should start assessing the policies that are already in place to better understand the gains
178 from mandatory versus voluntary disclosure. Fourth, economic and managerial sciences can improve
179 our understanding of how investors and firms can reduce carbon footprints. For instance, while
180 internal carbon pricing has expanded rapidly over the last few years, little is known about its medium-
181 term impact on energy decisions in the many large companies that use it.

182
183 From a policy perspective, we reiterate our support for the SEC’s current proposal as well as the importance
184 of climate stress tests and, if necessary, capital requirements reflecting climate risks—all while
185 gradually expanding carbon pricing. Further, it is crucial that disclosure policies are introduced by

186 other countries as well, improving financial stability in those economies and globally, given the
187 interconnectedness of financial flows. Finally, there is growing interest in disclosure policies that
188 account for broader sustainability issues including biodiversity losses.^{14,15} Policymaking in this area
189 can also build on research developments in effective measurement and disclosure metrics as well as
190 on the interaction of biodiversity and climate risks.

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