

Aligning financial and monetary policies with the concept of double materiality: rationales, proposals and challenges

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Summary

The concept of double materiality is developing rapidly, with potential implications for monetary and financial policies. Double materiality builds on the historical accounting and auditing convention of *materiality* and expands it by considering that non-financial and financial corporations are not only *materially* vulnerable to environment-related events and risks, but also *materially* contribute to enabling dirty activities and environmental degradation.

Three rationales that support the use of double materiality are distinguished in this paper, each with different policy implications: i) an idiosyncratic perspective – closely connected to the concept of *dynamic materiality* – which considers that an entity's environmental impacts are relevant as they provide information on the institution's own risks; ii) a systemic risk perspective – closely connected to the concept of *endogeneity of financial risks* – which seeks to reduce financial institutions' contribution to negative environmental externalities because of the systemic financial risks that could result from them; and iii) a transformative perspective seeking to reshape financial and corporate practices and values in order to make them more inclusive of different stakeholders' interests and compatible with the actions needed for an ecological transition. Each of these rationales has potential implications for monetary and financial policies, as well as possible theoretical and practical challenges.

While the adoption of a double materiality perspective remains an open question, the concept proposes the opportunity to think more comprehensively about the role of the financial system in urgently addressing the ecological challenges of our times.

This paper is part of a toolbox designed to support central bankers and financial supervisors in calibrating monetary, prudential and other instruments in accordance with sustainability goals, as they address the ramifications of climate change and other environmental challenges. The papers have been written and peer-reviewed by leading experts from academia, think tanks and central banks and are based on cutting-edge research, drawing from best practice in central banking and supervision.



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1. Introduction

Accounting and auditing norms and conventions, including the reporting frameworks used by non-financial and financial corporations, are often perceived as a merely technical and rather obscure field for the expert. In fact, such norms and conventions reveal broader world views and reflect what is valued in a society at a specific point in time. It is therefore not surprising that they have constantly evolved, both shaping and reflecting the broader socioeconomic landscape (Colasse and Déjean, 2022; Ferré and Zarka, 2020).

As we now need to engage in a deep transformation of our socioeconomic systems in order to address different yet interconnected ecological challenges such as climate change and biodiversity loss, an increasing number of stakeholders are calling for a reassessment of accounting and auditing norms and conventions. For instance, at the macroeconomic level, numerous initiatives seek to revisit national accounts in order to better integrate the role of nature as an enabler of economic activity (e.g. Dasgupta, 2021); and at the microeconomic level, expectations are growing for financial and non-financial corporations to systemically integrate environmental, social and governance (ESG) considerations into their decision-making processes and reporting frameworks.

Against this backdrop, an important debate has started around the concept of double materiality, which seeks to revisit and expand the existing accounting and auditing convention of *materiality*. The latter suggests that an entity's (a firm's, for example) accounting and reporting framework should reflect all the information that could influence the decisions made by the users of the entity's financial statements, such as its investors (see e.g. IFRS, 2018). Applied to issues such as climate change, this means that non-financial and financial corporations should disclose their vulnerability to climate-related events, the so-called physical and transition risks (including liability risks, which are sometimes considered separately).

Building on this concept, proponents of the idea of double materiality argue that it is not only the impacts of adverse environmental developments on the entity that can be material, but also the impacts of the entity on the environment (e.g. European Commission, 2019a, 2019b). As such, financial and non-financial institutions would also need to disclose these impacts. Moreover, monetary and financial authorities could seek to realign their policies and practices with this concept, for example by considering the environmental impacts of their own operations and/or of the entities they supervise.

While the concept of double materiality is increasingly debated among countries that oppose it and those that support it (e.g. the European Union) and even between investors and regulators (Verney, 2021), its actual scope and implementation remain unclear and its potential implications for monetary and prudential (or, more broadly, financial) policies could be subject to diverse interpretations. As Täger (2021) puts it, double materiality "still needs to be filled with life".

In order to clarify the existing debates, we identify three main approaches to how double materiality could be "filled with life", and the ensuing range of policy proposals. The first approach considers double materiality at the firm (e.g. financial institution) level and mostly deals with idiosyncratic risks. The second perspective appraises double materiality at the financial system level and focuses on mitigating systematic or even systemic financial risks. The third uses the concept as an entry point to a deep transformation of the ways in which the financial system works, so that it actively contributes to the ecological transition. While we do not favour any particular approach, we argue that each has different potential implications for monetary and financial policies and raises different challenges, as discussed throughout this paper.

"An important debate has started around the concept of double materiality, which seeks to expand the existing convention."

The paper proceeds as follows. Section 2 defines double materiality and its links with materiality. Section 3 presents the three perspectives mentioned above, emphasising in each case: their rationale; some monetary and financial policies that could follow from this rationale; and the main challenges that would arise from the implementation of such policies. Section 4 concludes.

2. From materiality to double materiality

2.1. What is (financial) materiality?

Before we turn to double materiality, it is important to present the accounting and reporting concept – or convention – of materiality on which it builds. The International Accounting Standards Board (IASB)¹ makes the following definition, endorsed by, among others, the European Commission (2019a): “information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements” (IFRS, 2018). Along similar lines, the US Security and Exchange Commission (SEC) considers that “materiality concerns the significance of an item to users of a registrant’s financial statements. A matter is ‘material’ if there is a substantial likelihood that a reasonable person would consider it important” (US SEC, 1999).

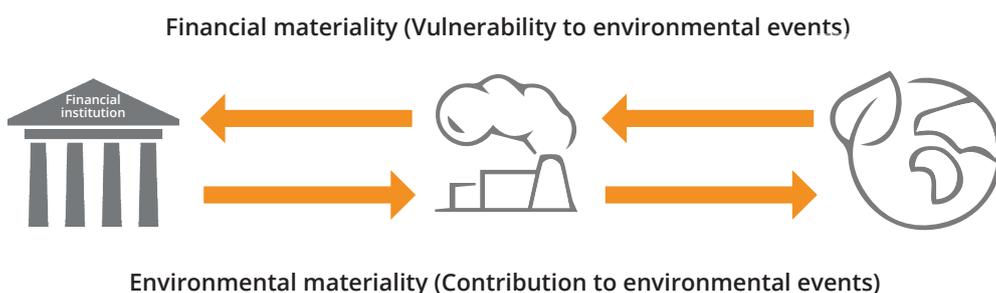
The concept of materiality has increasingly been used in relation to environment-related financial risks, most notably climate-related financial risks. The recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, 2017) aimed to improve and increase the reporting of climate-related information that is financially material to non-financial and financial corporations.² Consistent with these recommendations, the analysis of the financial materiality of climate and other environmental risks is usually classified somewhere between the now well-known physical risks, such as an increase in extreme climate-related events, and transition risks such as new climate-related regulations and taxes (e.g. NGFS, 2019; 2021a; Bolton et al., 2020a), including liability risks, which are sometimes considered separately. Building on these recommendations and further prototypes (CDP et al., 2020; TRWG, 2021), the International Sustainability Standards Board (ISSB) is developing sustainability-related disclosure standards to address investors and other capital market participants’ needs, focusing on sustainability matters that drive enterprise value.

2.2. Double materiality – an emerging concept

Double materiality takes the concept of materiality “one step further [by considering that] it is not just climate-related impacts on the company that can be material but also impacts of a company on the climate – or any other dimension of sustainability, for that matter” (Täger, 2021). In other words, and as reflected in Figure 1 below, double

“The financial materiality of climate and other environmental risks is usually classified somewhere between the now well-known physical risks and the transition risks.”

Figure 1. Double materiality



¹The IASB is an independent, private-sector body that develops and approves International Financial Reporting Standards (IFRS). It operates under the oversight of the IFRS Foundation.

²Paper 3 in this series examines how central banks are applying the TCFD’s recommendations (Kyriakopoulou et al., 2022).

materiality seeks to jointly assess the vulnerability of non-financial corporations and financial institutions to environmental risks (the financial materiality described above) and the contribution of these entities to such risks (the environmental materiality). These two ideas have also been commonly referred to as ‘outside-in’ materiality and ‘inside-out’ materiality, respectively.

The concept of double materiality, although it is not supported in all jurisdictions, has gained ground over the past few years. For instance, the EU’s guidelines on reporting climate-related information have “a double materiality perspective” (European Commission, 2019b) as they require companies to disclose on both financial materiality and environmental and social materiality related to climate change. However, the ways in which double materiality should be operationalised remain less clear.

3. Three approaches to double materiality

In this section we identify three different approaches to double materiality. For each approach we present: the rationale behind them; some potential ensuing monetary and financial policies; and key challenges that could arise from the implementation of such policies.

3.1. The idiosyncratic risk perspective

Rationale

Under the first approach double materiality is considered to matter because “environmental impacts could translate into financial risks, e.g. through legal liabilities or negative effects on a company’s reputation” (Täger, 2021). That is, the idiosyncratic risk perspective focuses on the financial risks that individual financial institutions may face. For instance, if a financial institution is exposed to firms with particularly damaging environmental footprints, it should be aware that these firms’ turnover, market value and credit rating are likely to be negatively impacted by forthcoming regulation. This makes particular sense when considering the ‘Inevitable Policy Response’ framework, commissioned by the UN-backed Principles for Responsible Investment, which “contends that governments will be forced to act more decisively than they have thus far, leaving financial portfolios exposed to significant transition risk” (PRI, 2021a).

This approach to double materiality may seem to coincide with that of dynamic financial materiality, which stresses that sustainability impacts can become financially material over time (as policies evolve, for example). For instance, the European Commission (2019c) indicates that financial and environmental-social materiality: “already overlap in some cases and are increasingly likely to do so in the future. As markets and public policies evolve in response to climate change, the positive and/or negative impacts of a company on the climate will increasingly translate into business opportunities and/or risks that are financially material.” Similarly, the beta framework released by the Taskforce on Nature-related Financial Disclosures recognises that “impacts on nature become relevant to enterprise value when assessed over a future time horizon” (TNFD, 2022).

In this context, and in the presence of many uncertainties regarding the materialisation of future transition risks³ (e.g. NGFS, 2019; Bolton et al., 2020a), environmental materiality assessment may be considered a proxy for (or at least a first step towards) financial materiality assessment. For example, some academic papers (e.g. Svartzman et al., 2021) suggest that a financial institution’s impacts on biodiversity can be used as a proxy for its exposure to transition risks. While the beta framework released by the TNFD focuses on the disclosure of material nature-related risks and opportunities, following an enterprise value approach aligned with that of the TCFD and ISSB, the assessment process that it suggests also recognises the evaluation of impacts (and

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³These include uncertainties around the pace of the increase in carbon prices and economic agents’ reactions to such prices; the technological breakthroughs or barriers that could appear on the road to the low-carbon transition; and multiple inherently political decisions that will shape future risks and opportunities (e.g. will public transport be favoured over private transport, and will equity considerations be more or less accounted for in climate policies?) that could face several implementation issues while potentially giving rise to litigation cases.

dependencies) on nature as a prior step towards the assessment of nature-related risks (TNFD, 2022). Going even further, a transparent and commonly accepted taxonomy regarding which activities can be considered green “may be regarded as an indicator of low transition risks at activity level” (NGFS, 2021b).⁴

Policy implications

A policy proposal that naturally follows is for regulators to require financial institutions to systematically disclose both their environmental impacts and the main financial risks that arise from such impacts. A case in point is the secondary legislation related to Article 29 of the French Energy and Climate Act (Article 8° bis.c of the *décret d'application*, published on 27 May 2021), which states that financial institutions shall disclose on how their impacts on biodiversity translate into specific transition risks (i.e. suggesting that impacts and exposure to transition risks are closely connected). Along these lines, a report by the Network for Greening the Financial System (NGFS) and INSPIRE on biodiversity loss and financial stability indicates that financial institutions “have impacts on biodiversity and could therefore face risks from the transition to a nature-positive global economy” (NGFS and INSPIRE, 2022). Results from both kinds of materiality assessment can then be compared and serve as a basis for dialogue with (and potentially, challenges from) investors, creditors or supervisors, especially when entities report a discrepancy between both assessments (which may be justified, as argued below).

Another policy proposal could be to introduce changes in microprudential regulation with respect to assets that are detrimental to the environment, with a view to reflecting the associated financial risks. Finance Watch (2021), for example, argues for a change in the first pillar of banking regulation to require that exposures to fossil fuels be entirely equity funded (i.e. that every euro invested into the sector would have to be backed by the same amount of capital) as they consider that the negative environmental impacts generated by a financial institution is a proxy for exposure to transition risks, especially in the presence of uncertainty as discussed above. Most jurisdictions have abstained from taking this path for now, in the absence of a clearly demonstrated risk differential between assets with distinct degrees of environmental performance, but the discussion is ongoing (NGFS, 2021b).

Challenges

This approach to double materiality and the policy proposals discussed above raise significant challenges. The main one is that the symmetry between the contribution to an environmental problem and the vulnerability to transition risks presented above may not always hold, especially if climate policies remain insufficiently ambitious. Simpson et al. (2021) find that in practice, the gap between the environmental impact and the vulnerability to transition risks can, in some instances, be considerable.

The existence of such a gap between environmental materiality and financial materiality may be related to the different temporal horizons over which one should think about impacts and risks. For instance, the European Commission (2016) notes that several respondents to its public consultation on long-term and sustainable investment found that “because most attention was paid to how the company and its share price would perform over the next year or two years at most, the vast majority of environmental and social issues were not considered financially material in conventional investment analysis”.

This “tragedy of the horizon” (Carney, 2015) suggests that the ability of markets to price in environmental risks may not be as poor as is often assumed, but rather that financial institutions’ horizon of materiality does not always naturally align with the horizon needed to fully appreciate environmental issues. It also means that a sole focus on financial materiality will likely not suffice to incentivise financial institutions to

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⁴In this respect, the European Banking Authority considers a ‘Green Asset Ratio’ (EBA, 2022), aligned with the EU’s green taxonomy (European Commission, 2020), to be a relevant indicator of climate-related risk mitigating measures.

operate with a longer-term horizon in mind (i.e. to break the tragedy of the horizon): a financial institution could for example rationally invest with short-term maturity and/or very liquid instruments in activities that are risky in the medium to long term but do not present major financial risks in the short term.

3.2. The systemic risk perspective

Rationale

A second perspective on double materiality is to consider it through the lens of systematic (rather than idiosyncratic) risk, i.e. without assuming that a financial institution's contribution to environmental degradation is always mirrored by its own vulnerability to future risks. This systematic dimension could even give rise to a systemic concern. Indeed, financial regulators and supervisors could consider that, by financing polluting activities today, financial institutions contribute to the build-up of future physical risks on the one hand, which may become systemic and irreversible, especially if tipping points are crossed (Bolton et al., 2020b) or if parties impacted by environmental disasters seek compensation that is so significant (the so-called liability risks) that they could become systemic. On the other hand, they may contribute to transition risks, which could also become systemic in certain scenarios (for instance, many financial institutions being exposed to future stranded assets could lead to fire sales if new environmental regulations lead them to suddenly reassess the price of such assets).

This systemic risk perspective is closely connected to the concept of endogeneity of (environmental-related) financial risks (Kedward et al., 2021) and aligned with the Basel Committee on Banking Supervision's characterisation of global systemically important banks (G-SIB),⁵ which considers that "in maximising their private benefits, individual financial institutions may rationally choose outcomes that, on a system-wide level, are suboptimal because they do not take into account [...] externalities" (Basel Committee on Banking Supervision, 2013). That is, the more a financial institution contributes to externalities such as climate change, the more it contributes to the potentially systemic financial risks that could result.

Policy implications

While this systemic risk perspective is less operational for private actors (who cannot handle public goods such as financial stability on their own), several policy proposals can be interpreted as falling within its scope. The discussion on capital requirements mentioned above may also be relevant from a macroprudential perspective, with a view to reducing the contribution of the banking and insurance industries to the systemic risk posed by climate change, regardless of risks at an idiosyncratic level. For instance, while arguing in favour of microprudential tools, the proposals from Finance Watch (2021) are meant to address risks that may affect the whole financial system. Dikau et al. (2021) and Robins et al. (2021) suggest that authorities could require all regulated financial institutions to submit net-zero transition plans setting out how their portfolios and loan books could be aligned with a transition to a climate-neutral economy, and then adjust capital requirements and risk buffers for non-aligned financial institutions, on the grounds that these institutions fail to demonstrate that they appropriately take into account the transformation of the economy and therefore contribute to financial instability. This means that under this approach, the disclosure of environmental impacts by financial institutions would remain essential but would first and foremost inform macroprudential regulation.

Double materiality could also influence the conduct of monetary policy, if one considers that central banks' climate-misaligned operations contribute to reinforcing

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⁵The five criteria to determine G-SIB are: the size of banks; their interconnectedness; the lack of readily available substitutes or financial institution infrastructure for the services they provide; their global (cross-jurisdictional) activity; and their complexity.

environmental externalities and therefore to the build-up of future climate-related systemic financial risks (see e.g. Schnabel, 2021). As a result, a number of proposals have been made to align monetary policy with net-zero goals. For instance, Dafermos et al. (2020) suggest that the European Central Bank's corporate asset purchases should no longer include bonds issued by companies with a high carbon intensity but should cover more purchases of bonds issued by firms in 'green' sectors. The authors argue that such practices would "support climate-related financial stability objectives". The ECB itself indicates that the framework of future corporate bond purchases "will include the alignment of issuers with, at a minimum, EU legislation implementing the Paris agreement through climate change-related metrics or commitments of the issuers to such goals" (ECB, 2021). While this approach does not explicitly refer to the concept of double materiality, the implementation of the ECB action plan will reveal whether the practical experience may, de facto, echo the concept.

Challenges

This systemic risk perspective on double materiality also raises considerable challenges, including the fact that financial regulators could face difficult trade-offs between different time horizons and the levels through which they may want to assess their objectives. For instance, Berenguer et al. (2020) argue that if regulators were to implement a 'green supporting factor', they could face a situation where they have to (i) adjust risk-weighted assets (RWAs) downwards for green assets, justified by the idea that it mitigates system-wide physical risks, while (ii) having to adjust them upwards if these green activities are risky from a usual Basel perspective, whose time horizon may appear shorter than that of climate-related and environmental risks. This suggests that, under specific circumstances, regulators and supervisors could end up being less stringent with regard to short-term risks at an individual level if they were to promote longer-term stability of the financial system as a whole.

It is also unclear whether prudential policies would have major impacts on the real economy, for instance whether they can actually contribute to decarbonising the economy in such a way that would enable the financial system to hedge against climate-related risks (see Krogstrup and Oman, 2019). For instance, the idea of implementing a 'dirty penalising factor', i.e. to increase capital requirements for regulated financial institutions that lend to or invest in carbon-intensive activities, is much debated among supervisors and researchers. Indeed, it may not be the most effective tool and it could have significant unintended consequences (Prudential Regulation Authority, 2021), or at least there would need to be some precaution with regard to its design to ensure its effectiveness and avoid such consequences (Chamberlain and Evain, 2021).

Operational challenges could also apply to monetary policy. For instance, Oustry et al. (2020) find that while the Eurosystem eligible collateral universe and pledge assets could be more aligned with the EU's climate goals, the volume of climate-aligned eligible assets rapidly shrinks when seeking to align them with ambitious climate objectives. Aiming to compensate for this challenge by accepting environmentally-friendly assets as eligible collateral would likely lead to being less stringent about idiosyncratic risk-based eligibility criteria, insofar as green assets are in short supply in the real economy. This suggests that decarbonising central bank operations may not be as easy as is sometimes claimed, and it could lead central banks to make trade-offs between their ability to transmit monetary policy and their ability to align with ambitious climate goals (Boneva et al., 2022) or with regard to increasing the demand for assets that already face a supply/demand imbalance. At the very least, a thorough assessment of potential trade-offs would need to be undertaken before any measures are taken.

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3.3. The transformative perspective

Rationale

The two perspectives above focus, at different levels, on guaranteeing the safety and soundness of individual financial institutions and of the financial system: i.e. on pursuing the mandate of central banks and financial supervisors in the face of environmental risks. This insistence of financial policymakers on their 'conventional' mandates has been criticised by some, as summarised by Demekas and Grippa (2021):

Critics have pointed out that in the face of climate change, which arguably represents an urgent threat to humanity – let alone the economy and the financial system – continuing to focus on financial stability is akin to re-arranging tables on the deck of the Titanic while doing little to 'make finance flows consistent with a pathway towards low GHG emissions and climate-resilient development' as laid out in the Paris Agreement.

As a result, a third perspective on double materiality is to consider that in order to address environmental challenges, private and public financial actors (including central banks and supervisors) have a duty to proactively support the ecological transition, including by contributing to the *transformation* of accounting and auditing conventions around materiality. Going back to the US SEC (1999) approach discussed earlier, according to which "a matter is 'material' if there is a substantial likelihood that a reasonable person would consider it important", a *transformative* perspective questions who the "reasonable person" is in an age of severe ecological threats (Täger, 2021). This perspective can therefore be understood as a "strong conception of double materiality", in contrast to the *idiosyncratic and systemic* risk perspectives presented above, which may fall within a "weak conception of double materiality" (ibid.).

In terms of disclosure, this approach means that reporting on environmental impacts has merits in and of itself and not only because it informs us about future financial risks. For instance, the European Financial Reporting Advisory Group recommends "disclos[ing] information that is material from both perspectives *as well as information that is material from only one perspective*" (EFRAG, 2022, emphasis added). Likewise, the *décret d'application* of Article 29 of the French Energy and Climate Act mentioned above requires that financial institutions disclose on how their investment strategy aligns with specific international climate and biodiversity targets without linking this to the assessment of financial risks.

More fundamentally, this perspective seeks to *transform* some aspects of the financial system, including the concept of materiality, to make them fit for the purpose of an ecological transition and the structural transformation of our socioeconomic systems that is required. Among the aspects that would need to be transformed, some argue that financialisation and the resulting systematic short-termism in managerial incentives can lead to decisions that are incompatible with the pursuit of long-term climate objectives, and should therefore be tackled by future regulations (e.g. Mazzucato, 2018; Stern and Stiglitz, 2021). Others go further by arguing that a sustainable finance framework requires shifting from the prevailing 'shareholder value' (which looks for the optimal financial return and risk combination) to a 'common good value' in which environmental and social impacts would become equally or even more important than financial value (e.g. Schoenmaker, 2017).

One can assess the whole joint development of impact finance and impact-weighted accounting⁶ under this approach to double materiality. For instance, the Principles for Responsible Investment's 'Legal Framework for Impact' seeks to promote an "investment approach where investors intentionally seek (through the activities they finance or otherwise) to influence what investee enterprises and third parties do in assessable ways that address sustainability challenges" (PRI, 2021b). This involves

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⁶See for instance the Impact-Weighted Accounts Project developed by the Harvard Business School: www.hbs.edu/impact-weighted-accounts/Pages/default.aspx

many potential actions, including “changing investors’ legal duties and discretions and how they are understood in ways that facilitate” sustainable investments (ibid.). Others focus on the need to address the political economy barriers to overcoming short-termism, including by relying less on market-based mechanisms and more on state-led development (Mazzucato, 2018).

Policy implications

The monetary and financial policy implications of implementing this approach are potentially broad. Financial regulators could seek to proactively support financial practices that are deemed more compatible with the ecological transition, for example by going as far as banning loans for dirty activities (Demekas and Grippa, 2021). With regard to monetary policy operations, the NGFS discusses the idea that central banks could “consider going beyond the adjustment of their operational frameworks solely from a risk management perspective by seeking to ensure that their monetary policy operations do not undermine the transition to a low-carbon economy and/or by exploring ways in which they can actively support that transition” (NGFS, 2021c). As an example, they could “accept sustainable collateral so as to incentivise banks to lend or capital markets to fund projects and assets that support environment friendly activities (e.g. green bonds or sustainability-linked assets)” (ibid.). Central banks could also signal to the markets and society at large the importance of improving one’s environmental impact by adopting ambitious targets for their own portfolios (e.g. Banque de France, 2021). While some of these policies could also make sense from the *systemic* risk perspective discussed above, they could go much further under the *transformative* perspective, potentially leading to trade-offs between primary (or traditional) goals and secondary (or new) objectives, as discussed further below.

Some observers and experts argue that this approach could be compatible with the extensive mandate of central banks and financial authorities, when such a mandate goes beyond price or/and financial stability to include a secondary mandate of supporting general economic policies, as is the case for the Eurosystem or the Bank of England.

Challenges

As with the previous views on double materiality, this approach raises several challenges. While this may not be fundamental, one may ponder whether it is necessary to invent a new concept such as double materiality to promote new financial and corporate values. For instance, Katz and McIntosh (2021) argue that if disclosure of some information is required “for non-financial reasons, it should be acknowledged as such and not swept into the concept of materiality”.

From an operational perspective, trade-offs could arise for central banks between the willingness to proactively support the ecological transition and the need to deliver on their (primary) mandates.⁷ For instance, if environmental policies were to have an inflationary effect⁸ as is currently debated (e.g. Schnabel, 2022), then an increase in interest rates by central banks would de facto affect the ability to achieve environmental goals if associated investments (e.g. in renewable energy capacity) require relatively higher upfront capital. In contrast, seeking to achieve price stability in the short term and at the expense of the low-carbon transition could undermine climate and financial stability in the long term (Artus, 2022).

More fundamentally, placing too much emphasis on the role of financial behaviours and policies arguably could distract from the need for strong government policy in the *real economy* (e.g. carbon pricing and green industrial policies) to address environmental issues (Fancy, 2021). For instance, one can consider that avoiding the potentially inflationary trends discussed above should primarily be handled *ex ante* through government policies (e.g. appropriate industrial and energy policies, or the regulation of energy prices) rather than *ex post* through monetary policy.

“The question of coordination between fiscal, monetary and prudential policies is paramount to a successful transition.”

⁷In the same manner, trade-offs could arise for private players between their fiduciary duties and their social and environmental goals. For instance, the PRI’s ‘Legal Framework for Impact’ suggests to change investors’ legal duties to support “the pursuit of sustainability goals as long as financial return goals are prioritised” (PRI, 2021b). In practice, social and environmental goals may often be incompatible with returns for investors, in particular in sectors such as education, health or environment that often require long-term public investments.

⁸We do not necessarily support this view, but simply use this debate as an example of the potential challenges ahead.

As a general matter, a large literature shows that monetary and prudential policies are less effective than fiscal policies, although they should certainly be aligned with them (see Krogstrup and Oman, 2019). The question of coordination between fiscal, monetary and prudential policies is therefore paramount to a successful ecological transition (Bolton et al., 2020a), and the concept of double materiality cannot be assessed in isolation from such questions.

4. Conclusion

Despite a relative consensus around its definition and the fact that firms and financial institutions should in any case increasingly disclose their environmental impacts, the justification for the concept of double materiality can be interpreted through three different rationales: an idiosyncratic perspective that considers that an entity's environmental impacts are relevant as they provide information on the risks faced by the institution itself; a systemic risk perspective that seeks to reduce financial institutions' contribution to negative environmental externalities, because of the systemic financial risks that could result from them; and a transformative perspective that seeks to move beyond a risk-based approach and revisit accounting and auditing norms and conventions, including corporate reporting frameworks, in order to align them with ecological imperatives.

As discussed throughout this paper, "different reasons for adopting this concept might lead to widely varying interpretations" (Täger, 2021) and ensuing policy proposals, ranging from an improved disclosure of environmental impacts and risks to a whole reassessment of the incentives informing financial behaviours. Moreover, each set of policy proposals generates its own institutional and operational challenges. Besides, while legislation would be necessary to ensure that financial institutions and non-financial corporations increasingly disclose their environmental impacts, the ways to factor such information into central banking are less clear, open to different interpretations across jurisdictions, and depend on the perspective retained.

As different jurisdictions are adopting different positions on double materiality, from rebuttal to embracing it in the case of the EU, some fragmentation seems likely in terms of reporting standards across the world. It is therefore important to ensure that the existing diverging views on double materiality do not prevent the development of consistent and interoperable approaches across jurisdictions, given the need for global action to address many environmental challenges such as climate change and biodiversity loss.

Moreover, while accounting and auditing norms and conventions are by nature evolutionary and therefore could come to increasingly embrace the concept of double materiality in the future, it is important not to overstate their importance. Socioeconomic transformations take place through deep institutional processes that include but are not limited to accounting norms (Timbeau, 2022).

Notwithstanding these issues, double materiality has the merit of bringing to the fore the critical question of how we should think about accounting and auditing norms and conventions as well as the values they contribute to, in the face of a new ecological reality. That is, the oppositions and nuances to double materiality should not make us lose track of the fact that addressing environmental risks calls for urgent action at all levels, including first and foremost government actions but also an alignment of the financial system with such government policies (Elderson, 2021). The latter involves multiple efforts such as revisiting non-financial corporations' and financial institutions' disclosure frameworks, but also the promotion of new practices (e.g. with regard to long-term investments with uncertain returns) that monetary and financial policies could support.

"The existing diverging views on double materiality must not prevent the development of consistent and interoperable approaches across jurisdictions."

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