Université Paris II- Panthéon-Assas

Ecole doctorale Sciences Economiques et Gestion

Thèse de doctorat en Sciences Economiques
soutenue le 21 Octobre 2019

Pitfalls and Prospects of Sustainability Risks Management under the Modern Investors' Fiduciary Duty

EU and US pensions regulation perspective

Thèse de Doctorat / Octobre 2019

UNIVERSITÉ PARIS II
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Dédicace

To my mother, Vera.

A ma mère, Véra.

Remerciement

Je remercie sincèrement un grand économiste et mon tuteur de thèse, professeur Bruno Deffains, pour sa confiance, son optimisme et son indéniable professionnalisme qui va bien au-delà des compétences techniques étant fondé sur une perspicacité d'esprit et une finesse humaine.

Je tiens à remercier vivement le jury pour leur curiosité, leur questionnement et leurs suggestions.

Je remercie chaleureusement Olivier Musy, Damien Gaumont, Claudine Desrieux, Marie Obidzinski pour leurs conseils aux moments de choix parfois douloureux, leur écoute et leurs commentaires ainsi que toute l'équipe du CRED. Je souhaite également exprimer ma profonde admiration envers les doctorants du CRED, notamment, pour leur passion pour la recherche, une mésinterprétation toujours candide, mais à chaque fois étonnement constructive et inspirante du travail de l'autrui ainsi que pour leur grande patience.

Je suis profondément reconnaissante à l'ensemble des membres et au jury du Forum pour l'Investissement Responsable (FIR) pour le Prix 2016 du FIR et personnellement, à Grégoire Cousté et Thiên-Minh Polodna, pour leur soutien, leur confiance et leur engagement.

J'envoie également mes remerciements spéciaux à:

Emmanuel de La Ville et l'équipe EthiFinance pour deux ans d'expérience professionnelle courant ma thèse au sein de l'équipe extraordinaire d'analystes qui m'a offert une vision plus claire et ample du monde de la « finance durable » et à l'ensemble des experts du marché ISR en France et en dehors qui m'ont aiguillée sur l'ISR et ont partagé avec moi leurs doutes et convictions sur l'ISR et leurs difficultés de métier au quotidien.

Enfin, j'éprouve une reconnaissance toute particulière pour le soutien constant et inconditionnel offert à moi par ma mère dans cette aventure. Son encouragement, qui était pour moi une source insondable d'inspiration, pourrait être résumé de la meilleure façon à travers les paroles de Lewis Carroll "Curiouser and curiouser!"[1]

J'ai donc l'honneur de lui dédier cette humble œuvre.

[1] Lewis Carroll, *Alice in Wonderland*.

(FR) Lewis Carroll, *Alice aux pays des merveilles*: « *De plus en plus curieux !* »

Perspective sur la Gestion des Risques relatifs au Développement Durable dans le cadre de la Responsabilité Fiduciaire des Investisseurs

Résumé : La compatibilité de la gestion des risques environnementaux, sociaux et de gouvernance (ESG) avec les exigences des responsabilités fiduciaires des investisseurs (RF) en matière de gestion d`investissements est la question clé dans le contexte actuel de croissance rapide des stratégies d'investissement durable. Cette question fait donc l'objet des développements réglementaires en Europe ainsi que de poursuites récentes aux Etats-Unis. Malgré ces activités légales, les investisseurs n'ont toujours pas de réponse claire à ce problème, ce qui les laisse inertes face à ces nouveaux types de risques.

Nous explorons ces récents développements dans la pratique juridique européenne et américaine pour déterminer concrètement dans quelle mesure les RF permettent la prise en compte par les investisseurs des risques ESG dans leurs décisions d`investissement. Nous identifions la *matérialité* des risques ESG et l'*efficacité* des actions de gestion des risques comme les éléments fondamentaux pour la définition de la responsabilité fiduciaire des investisseurs en matière de gestion des risques ESG. Nous élaborons une représentation théorique du concept de matérialité sous les contraintes des RF et identifions que dans ce cadre juridique les risques ESG sont assimilés aux risques financiers; leur gestion n'est donc requise que s'ils affectent financièrement les investissements. Nous démontrons également que les RF exigent la gestion des risques ESG *long terme*, s`ils sont suffisamment matériels compte tenu du taux d'actualisation appliqué, et formulons un principe d'actualisation conforme aux RF. Puis, à travers l'Etude de cas d`un récent litige aux Etats-Unis, nous établissons que l'aversion pour le risque dans la qualification de l'efficacité des actions de gestion des risques ESG pourrait entraver une gestion efficiente des risques en incitant les investisseurs à ne pas gérer un risque ESG matériel.

Descripteurs : Responsabilité fiduciaire, investisseurs institutionnels, fonds de retraite, risques environnementaux, sociaux et relatifs à la gouvernance (ESG), matérialité, prise de décision en incertitude, gestion des risques, aversion au risque, droit fiducie-gestion, responsabilité civile, incertitude préventive, prise de précaution optimale.

Pitfalls and Prospects of Sustainability Risk Management under the Modern Investors' Fiduciary Duty

Abstract: The compatibility of Environmental, Social and Governance (ESG) risks management with the investment management requirements under the investors` fiduciary duties (FD) figures among the key questions in today`s context of a rapid growth of sustainable investment strategies. This question is thus the subject of the ongoing regulatory developments in Europe and the object of recent lawsuits in the US federal jurisdiction. Despite these current legal developments, investors still have no clear answer to this issue, what leaves them inert in the face of these new and unconventional types of risk.

In our research, we explore the recent advancements in the EU and the US legal practice aiming to determine to what extent the FD requires ESG risks consideration by investors in their investment management decisions. We identify ESG risks *materiality* and the *effectiveness* of risk hedging actions as fundamental elements for the definition of ESG risks management obligations of investors under the FD rule. We design a theoretical representation of ESG risks materiality under the FD law and identify that within the FD legal framework ESG risks are assimilated to financial risks; thus, their management is required only if they are financially material for investments. We also reveal that the FD law requires management of *long-term* ESG risks, which are sufficiently material considering the applied discount rate, and formulate a FD-compliant discounting principle. Then, through the Case Study of the recent US ERISA ESOP lawsuit, we establish that risk-aversion in the qualification of the effectiveness of ESG risk hedging actions could impede efficient risk management by incentivising investors not to hedge a material ESG risk.

Keywords: Fiduciary duty, institutional investors, pension funds, sustainability, ESG risk factors, materiality, decision-making under uncertainty, risk management, risk-neutrality, risk-aversion, trust fiduciary law, tort liability of negligence, precautionary uncertainty, optimal precaution.

Principales abréviations

ALM – Asset-Liability Management system

CAPM – Capital Asset Pricing Model

COP 21- Conference of Parties on climate change held in Paris in 2015

DB / DC – Defined Benefit / Defined Contribution pension plans

EFAMA – European Fund and Asset Management Association

ESG – Environmental, Social and Governance-related risk criteria

ESG FD – Fiduciary obligation that includes provisions on a mandatory consideration of sustainability (ESG) risk criteria in investment decision-making

ESMA – European Securities Markets Authority

ESOP – Employee Stock Ownership (type of private pension scheme in US)

EU MiFID – European Union Markets in Financial Instruments Directive

EU CMU – European project on Capital Markets Union

FD – Fiduciary Duty

FSB TCFD – Financial Stability Board' Task Force on Climate-related Financial Disclosure

IFRS – International Financial Reporting Standards

IIGCC – Institutional Investors Group on Climate Change

IORP – Institutions for Occupational Retirement Provision

MPT – Modern Portfolio Theory

OECD – Organisation for Economic Cooperation and Development

SRI – Socially Responsible Investment or Sustainable and Responsible Investment

UNEP FI – United Nations Environment Programme Finance Initiative

UN PRI- United Nations Principles for Responsible Investment

UN SDG – United Nations Sustainable Development Goals

US DOL – United States Department of Labor

US ERISA – United States Employee Retirement Income Security Act

US GAAP – United States Generally Accepted Accounting Principles

US SEC – United States Securities and Exchange Commission

US UPIA – United States Uniform Prudent Investor Act

US UTC – United States Uniform Trust Code

VaR – Value-at-Risk

Résumé du Projet de Recherche (en FR)

Au cours des dernières années, des académiques ainsi que des professionnels du marché financier soulevaient régulièrement la question de l'intégration de nouveaux types d'information et de risques dans la gestion d'investissements. Ceci est principalement dû à deux tendances que nous observons depuis quelques années dans le domaine financier: la multiplication des critiques portant sur les limites des théories et principes communs d'investissement, notamment de la Théorie Moderne du Portefeuille (TMP) ; et l'apparition de nouveaux types de risques inhabituels pour la gestion dite traditionnelle, notamment des risques relatifs au développement durable et au changement climatique. C'est au croisement de ces deux mouvements mondiaux que le besoin de créer le concept de la Finance Durable est apparu. Les partisans du mouvement de la finance durable ont assez rapidement reconnu que les finances publiques ne suffiraient pas pour assurer la transition vers le système socio-économique durable et responsable ; l'inclusion du secteur privé est donc devenue indispensable. Ainsi, très rapidement, les investisseurs institutionnels (ci-après « investisseurs »), en raison du volume important de leurs investissements sous gestion, ont été ciblés par le mouvement mondial de l'ISR (Investissement Socialement Responsable ou Investissement Durable et Responsable). Parmi les investisseurs institutionnels, un accent particulier a été mis sur les régimes de retraite puisque pendant toute la durée de l'existence d'un régime de retraite, les fonds de pension sont exposés à tous types de risque de la chaîne de valeur de la gestion des investissements à court, moyen et long terme. Ainsi, ces agents financiers appartiennent à la catégorie de *Universal Owners* ou *investisseurs universels*. Leur exposition à divers risques et leur capacité à les gérer ont des conséquences directes pour un grand nombre de personnes dans la plupart des pays. Les investisseurs institutionnels, en jouant le rôle de représentants et de gestionnaires d'une part non négligeable de la richesse mondiale des populations, se sont retrouvés donc au carrefour de la polémique sur les limites des théories traditionnelles de l'investissement et sur la nécessité d'assurer la transition vers le développement durable.

Afin de réagir à ces mouvements et pour préparer les investisseurs à une telle transition, l'idée d'introduire des facteurs de risque liés au développement durable

(également appelés les facteurs de risque Environnementaux, Sociaux et de Gouvernance (ESG)) dans le processus de gestion des risques appliqué par les investisseurs est apparue et s'est rapidement retrouvée au cœur du concept de l'ISR. En conséquence, la question de la compatibilité des risques ESG et de leurs méthodes de gestion avec l'approche traditionnelle de prise de décision d'investissement et de gestion des risques par les investisseurs a été soulevée par de nombreux professionnels du marché. Pour tenter de répondre à cette question, les investisseurs se sont tournés vers la loi qui leur était applicable et réglementait leurs activités. L'une des principales normes juridiques qui régissent les décisions d'investissement et de gestion des risques par les investisseurs est leur devoir légal vis-à-vis les membres ou/et les bénéficiaires de leurs plans d'investissement – la Responsabilité Fiduciaire (RF). La responsabilité fiduciaire des investisseurs est une norme de conduite légale spécifique. Elle oblige les investisseurs (par exemple, les fonds de pension) qui gèrent et investissent le capital des membres (bénéficiaires) de leurs plans d'investissement à le faire de manière adéquate, professionnelle et avisée en répondant aux attentes des bénéficiaires dans le cadre des objectifs financiers définis pour ce plan. La règle juridique du devoir fiduciaire a ainsi pour objectif principal de protéger les bénéficiaires des fonds gérés par un investisseur des actions de mauvaise gestion ou des décisions de gestion des risques inappropriées par ce dernier. Cette protection est assurée par un ensemble de règles établissant le cadre décisionnel en matière de gestion des risques relatifs aux investissements régissant ainsi la prise de décision par les investisseurs. Aujourd'hui, avec la tendance courante d'intégration de nouveaux éléments de risque, notamment des risques ESG, dans le processus de décision d'investissement et de gestion des risques par les investisseurs, la définition de la RF de ces derniers particulièrement par rapport à ces nouveaux éléments de risque soulève de nombreuses questions.

Ces questions découlent notamment de différences fondamentales entre ces nouveaux facteurs de risque ESG et les facteurs financiers traditionnels ainsi que de l'incertitude concernant les capacités des investisseurs à gérer ces nouveaux types de risque de manière efficace. Nous résumons ces différences dans le tableau suivant:

Caractéristiques du cadre actuel de gestion des risques par les investisseurs dans le cadre de leur RF	**Caractéristiques de gestion des risques ESG**
Orientation à court terme	Orientation à court, moyen et long terme
Aversion au risque	Neutralité vis-à-vis des risques
Recours universel aux risques classiques liés à la **performance quantitative.** Ceci est dû à l'application générale des théories modernes de gestion d'investissement, y compris des mesures et des outils de risque universels (tels que *Value-at-Risk* et *Risk Budgeting* également utilisés par les régimes de retraite dans leur systèmes globaux de gestion *Asset-Liability Management (ALM)*)	Prise en compte de nouveaux types de risques atypiques pour la gestion traditionnelle : - Risques systémiques - Facteurs de risque qualitatifs et / ou intangibles - Facteurs de risques associés à la contribution à l'économie réelle (i.e. facteurs liés aux externalités).

La place contestée des risques ESG dans le cadre de la Responsabilité Fiduciaire des investisseurs

Cependant, aujourd'hui, on ne voit pas clairement comment les trois aspects de la gestion de risques traditionnelle et ceux de la gestion des risques ESG pourraient interagir et être combinés dans le cadre du même processus décisionnel des investisseurs régi par les règles de décision concrètes établies par la norme de Responsabilité Fiduciaire.

La norme juridique de la RF actuelle, basée sur les deux règles fondamentales de *loyauté* et de *prise de décision raisonnable (prudence)*, évalue le caractère raisonnable d'une décision d'investissement en utilisant le cadre de gestion des risques traditionnel fourni par les théories économiques modernes, notamment par la TMP. À savoir, la formulation générale du devoir fiduciaire

stipule que les investisseurs doivent agir avec compétence et diligence, éviter les investissements spéculatifs et indûment risqués et investir en construisant un portefeuille de placements suffisamment diversifié. Cette formulation varie d'une juridiction à l'autre, mais les différences ne sont pas fondamentales; les deux principes de loyauté et de prudence sont toujours présents et font référence à la TMP. En sachant que la TMP est généralement acceptée dans la régulation financière et appliquée largement par les marchés financiers, il semble difficile de concevoir une extension possible du cadre décisionnel en matière d'investissement et de gestion du risque régi par le régime juridique de la RF intégrant la TMP vers une conception de la gestion des risques non conventionnels ESG. En même temps, le mouvement de l'ISR se renforce progressivement en attirant de plus en plus d'investisseurs. Toutefois, l'absence de consensus aggrave l'incertitude concernant la place de la gestion ISR dans le cadre de la RF des investisseurs. Cette incertitude est dangereuse car un investisseur institutionnel qui ne respecte pas les principes de conduite établis par la RF peut en être tenu responsable ; mais pour les respecter il a besoin d'une information claire sur ses obligations et devoirs. La responsabilité juridique des investisseurs étant en jeu, il est fondamental de clarifier le rôle et la place de la gestion des risques ESG dans le cadre décisionnel en matière d'investissement et de gestion des risques conformément aux règles actuelles de la RF. Cette nécessité de formuler explicitement un modèle décisionnel d'un investisseur type selon la norme actuelle de RF afin de clarifier la place des risques ESG et les possibilités de leurs intégration dans une décision de gestion d'investissement motive ce projet de recherche.

Pour atteindre l'objectif de cette recherche, nous nous appuyons sur l'analyse juridique et sociologique des problématiques identifiées (ce qui représente une approche habituelle pour traiter ce sujet de recherche) et la complétons en introduisant certains concepts de l'analyse économique. Nous explorons notamment les outils et les modèles existants dans l'analyse économique pour illustrer la capacité de l'économie d'apporter de nouvelles solutions et de fournir une étude plus approfondie de la régulation en matière de l'ISR, y compris de la norme de la RF qui était jusqu'à présent principalement examinée dans les recherches strictement juridiques ou généralistes. Ainsi, nous souhaitons contribuer avec cette thèse au lancement d'une dynamique

d'utilisation de la théorie d'économie du droit dans les analyses portant sur le domaine d'ISR et sur le processus de sa régulation.

1. Problématiques Traitées dans la Thèse

Ici, nous ne cherchons pas à critiquer la TMP ni à introduire une alternative potentielle à la TMP. Dans cette thèse, notre objectif est de fournir une bonne compréhension des problématiques exposées dans les paragraphes précédents et de formuler clairement les possibilités de prise en compte des facteurs de risques ESG dans le processus de décision d'investissement par les investisseurs sous les contraintes de leurs devoirs fiduciaires. Dans notre recherche, nous développons un modèle reconstruisant les contraintes légales et les pratiques actuelles en matière de gestion des risques sous les exigences de la RF. Nous précisons ensuite les possibilités d'intégration des risques ESG dans la décision d'investissement par les investisseurs sous ces contraintes. Notre travail de recherche contribue ainsi aux études théoriques sur la prise de décision en incertitude et de gestion des risques ESG dans le contexte des exigences légales appliquées aux investisseurs, spécifiquement de la Responsabilité Fiduciaire. La structure de la recherche se base ainsi sur l'analyse des deux questions principales:

(1) Dans quelle mesure les facteurs de risque ESG pourraient-ils être pris en compte dans la décision de gestion des risques par les investisseurs régie par la règle juridique de la RF ?

Cette question, ayant été étudiée précédemment, reste toutefois ouverte pour de nombreux professionnels de l'investissement. Aujourd'hui, les conditions légales relatives aux possibilités d'intégration des facteurs de risque ESG dans le processus de décision par des investisseurs sous les contraintes de la RF sont très ambiguës et souvent mal comprises par les professionnels du secteur financier. Ces derniers expriment des points de vue divergents et parfois opposés sur la conformité de la gestion ESG avec la RF. De plus, avec la proposition de la Commission Européenne à introduire dans la régulation appliquée aux investisseurs un standard de RF avec l'exigence de prise en compte par des investisseurs des risques ESG dans leur décision d'investissement complique d'avantage ces débats. Cette initiative juridique a

introduit une nouvelle perspective dans l'analyse de la RF appliquée à la gestion des risques ESG, toutefois, toujours sans offrir une réponse claire aux investisseurs au problème principal.

Notamment, la proposition juridique de l'UE spécifie que seuls les facteurs de risque ESG *matériels* pouvaient être pris en compte par les investisseurs dans le cadre de leur RF. De ce point de vue, il est clair que dans le contexte du droit européen l'intégration des risques ESG dans le cadre décisionnel en matière d'investissement régi par la RF sera déterminée par le concept de *matérialité* des risques ESG. Toutefois, la Commission Européenne ne définit pas concrètement la matérialité pour les risques ESG, ce qui laisse des marges importantes aux interprétations et, donc ne résout pas l'incertitude en matière de la compatibilité des risques ESG avec les exigences de la RF. Nous avons déjà évoqué les différences entre les risques financiers traditionnels et les risques ESG. Ces différences découlent de multiples définitions des risques ESG ainsi que du fait que de nombreux risques ESG appartiennent à de nouvelles catégories de risques (risques systémiques, intangibles ou long terme, etc.) qui sont très inhabituels, extrinsèques et peu caractéristiques du cadre classique d'investissement et de gestion des risques régulé par la RF. Laquelle parmi ces définitions et catégories disponibles servira de base pour la détermination de la *matérialité* des risques ESG dans le cadre de la règle européenne de la RF est une question ouverte. Aussi, des problèmes liés à la quantité et à la qualité des données ESG, des métriques peu développées (dans de nombreux cas juste naissants) ainsi que des incertitudes concernant les méthodologies appliquées persistent et compliquent l'analyse de matérialité de ces risques. Dans cette optique, si les facteurs de risque financiers conventionnels semblent offrir des résultats relativement prévisibles dans le cadre du processus décisionnel traditionnel, les risques ESG apparaissent à certains investisseurs comme relativement peu fiables, voire impertinents. Par conséquent, la proposition européenne de l'intégration de l'obligation de prise en compte des risques ESG comme un élément nécessaire de la bonne gestion des risques dans le cadre de la responsabilité fiduciaire des investisseurs suscite certaines inquiétudes.

Devant cette incertitude relative au concept de matérialité appliqué aux risques ESG et à la compatibilité de la gestion des risques ESG avec les

exigences de la RF en matière de décision d'investissements, nous construisons un modèle théorique permettant d'établir la définition de matérialité des risques ESG telle qu'elle est autorisée dans le cadre actuel de la RF des investisseurs. Pour cela, nous fondons notre analyse notamment sur le cadre juridique européen.

Toutefois, la matérialité ne représente pas la seule question compliquant la prise en compte des risques ESG par les investisseurs ; l'autre aspect qui suscite une analyse attentive est l'identification des stratégies de gestion efficientes et efficaces face aux risques ESG. Notamment, il semble que ce sont l'efficience et l'efficacité d'une décision prise par un investisseur face à un risque qui détermine sa responsabilité légale devant ses bénéficiaires. Ceci nous amène à la deuxième question étudiée dans notre travail de recherche.

(2) Dans quelle mesure la gestion des risques ESG engage-t-elle la responsabilité des investisseurs dans le cadre de leur Responsabilité Fiduciaire?

La problématique de la responsabilité des investisseurs dans le cadre de leur RF en ce qui concerne les décisions de gestion des risques ESG n'a pas encore été abordée dans la littérature scientifique ni par les professionnels du secteur financier. Ainsi, elle présente un champ de recherche ouvert et particulièrement intéressant sur le sujet de l'investissement durable (ISR) dans le contexte de la RF des investisseurs. Cette problématique a notamment été soulevée dans le cadre d'une poursuite légale très récente contre Exxon Mobil Corporation aux États-Unis; ce qui a marqué une nouvelle étape dans le mouvement des contentieux en matière de développement durable en élargissant son champ aux questions relatives au non-respect des obligations fiduciaires par les investisseurs. La plainte en question a été déposée par un groupe d'employés d'Exxon pour la raison des pertes subies par le fonds de pension privé géré par Exxon pour le compte de ses employés et causées potentiellement par l'inaction d'Exxon face aux risques liés au changement climatique. Notamment, ce cas de litige soulève (en plus des problématiques connues par l'économie du droit telles que la déclaration de perte, la définition du lien de causalité, etc.) une question très spécifique et rarement considérée – l'efficacité de la décision de gestion prise par un

investisseur face à un risque, particulièrement un risque ESG. Ainsi, l'efficacité des décisions de gestion s'est révélée fondamentale dans la classification par le juge d'une telle décision mise en place par un investisseur comme conforme ou non aux obligations fiduciaires de ce dernier. Ainsi, non seulement l'aspect d'efficacité de la décision des investisseurs contribue à définir leur responsabilité dans le cadre de la RF, mais soulève également certaines problématiques opérationnelles de prise de décision, notamment relatives au choix d'action qu'un investisseur pourrait réellement entreprendre face aux risques ESG. L'analyse de l'affaire Exxon a révélé que l'efficacité espérée d'une mesure de gestion face aux risques ESG représente, avec le concept de matérialité de ces risques, le fondement pour la définition des obligations et de la responsabilité des investisseurs dans le cadre de leur devoir fiduciaire. Nous découvrons également à travers notre analyse du cas Exxon que certaines des normes relatives à la RF appliquées actuellement dans le droit américain sont potentiellement inefficaces et donc nécessitent des corrections. Nous proposons ensuite une formulation possible des modifications potentiellement applicables.

En général, notre analyse de la proposition européenne du standard de RF ainsi que du litige dans le contexte du droit américain ouvre de nouvelles perspectives pour la recherche sur la prise de décision par les investisseurs dans le respect des contraintes juridiques du standard de la RF. Dans ce travail de recherche nous clarifions la place de la gestion des risques ESG dans le cadre de la RF appliquée aux investisseurs et contribuons ainsi à l'analyse du standard moderne du devoir fiduciaire face à l'impératif socio-économique d'intégration des facteurs de risque ESG dans le processus décisionnel en matière d'investissement et de gestion des risques par les investisseurs. Nous contribuons également au développement de l'analyse de la qualification des décisions de gestion d'investissement impliquant des critères ESG dans le cadre des responsabilités civiles appliqué aux investisseurs. C'est un champ de recherche encore peu exploité; ce qui est également le cas de l'analyse de la question de l'efficacité des actions en matière de gestion des risques ESG mises en place par les investisseurs sous les contraintes de la RF. Nos travaux jettent les bases nécessaires au développement futur de mesures économiques et juridiques efficaces en ce qui concerne la gestion des risques ESG dans le cadre de la prise de décision des investisseurs régie par le standard de RF.

2. Structure et Résultats de la Recherche

L'objectif de cette thèse est donc de fournir des éléments de réponse aux deux problématiques principales que nous avons présentées dans les paragraphes précédents. Pour atteindre cet objectif, nous avons organisé ce travail de recherche de la manière suivante.

Dans le **Chapitre 1** de notre thèse, nous présentons un Etat de l'Art sur les cadres juridiques de la RF dans l'UE et aux États-Unis afin de fournir un contexte pertinent pour notre étude. Il s'agit d'une approche analytique dynamique basée sur l'examen des évolutions réglementaires et judiciaires les plus récentes dans le domaine de la RF appliquée à l'ISR dans l'UE et aux États-Unis. Nous fournissons une analyse complexe des éléments de la structure juridique des obligations fiduciaires des investisseurs dans ces zones géographiques en relation avec les problématiques identifiées, à savoir la définition de la matérialité des facteurs de risque ESG et la qualification de la responsabilité des investisseurs en relation à l'efficacité de leurs actions de gestion de risques face à un risque ESG. Suite à cette analyse, nous avons conclu que les cadres juridiques existants de la RF ne fournissent pas d'éléments suffisants pour répondre clairement à ces deux problématiques formulées. Par conséquent, nous identifions le besoin pour l'établissement d'une définition concrète de la matérialité des risques dans le cadre de la RF ainsi que pour la clarification du rôle du facteur de l'efficacité d'une action de gestion des risques ESG dans la qualification de la responsabilité juridique des investisseurs dans le cadre de la RF. Nous proposons quelques solutions dans les chapitres suivants.

Dans le **Chapitre 2** de la thèse, nous utilisons la théorie de décision en incertitude afin de reconstruire le processus de prise de décision par un investisseur dans le cadre du droit de la RF ainsi que pour développer sur cette base une définition concrète de la matérialité applicable aux facteurs de risques ESG. Nous déterminons ainsi une définition de matérialité telle qu'elle est permise par le système juridique de la RF en vigueur et démontrons les limites de son application à la gestion de risques ESG par des investisseurs. Nous constatons cependant que certains aspects des facteurs de risque ESG, en particulier le *long-termism*, pourraient être permis dans le cadre de la règle actuelle de la RF. Nous proposons donc

quelques principes généraux pour la prise en compte des risques ESG matériels, y compris des risques ESG long-termes, par les investisseurs dans le cadre des contraintes de leur RF. Ainsi, dans cette recherche, compte tenu de la grande incertitude entourant les interprétations de la matérialité des risques ESG énoncées précédemment, nous formulons très concrètement, en construisant un modèle théorique, quelle définition de la matérialité des facteurs de risque ESG est autorisée sous les contraintes de l'interprétation actuelle de la norme de la RF. Nous précisons que toute autre définition potentielle de la matérialité ne serait autorisée dans le cadre de ce standard et exigerait donc une profonde réforme de la norme en question. Nous notons cependant que les résultats de cette analyse théorique montrent clairement que, dans le cadre juridique de la RF, les risques ESG sont assimilés aux facteurs de risque financiers classiques. Cela signifie que certains aspects spécifiques des facteurs de risque ESG, tels que le long-termism, ne seraient acceptés que partiellement sous la règle FD. Autrement dit, ils ne seront acceptés que dans les limites de leur matérialité financière vis-à-vis les investissements.

Dans le **Chapitre 3** de notre thèse, nous fournissons une Etude de Cas basée sur l'analyse du premier cas de litige relatif à la gestion des risques ESG par un investisseur sous les contraintes de la RF – le cas d'Exxon Mobil (2016-2019) aux Etats-Unis. Dans cette étude de cas, nous avons poursuivi l'analyse de la prise de décision des investisseurs dans le cadre de la règle de RF en utilisant les outils de la théorie de décision en incertitude. Toutefois, cette fois-ci nous nous sommes concentrés sur l'efficacité des mesures de gestion des risques mises en place par les investisseurs et sur la qualification de ces mesures par le Juge en ce qui concerne leur conformité avec le niveau de précaution à prendre par un investisseur dans le cadre de ses responsabilités fiduciaires. Pour cela, nous avons d'abord modélisé la représentation d'un choix d'action de gestion optimal face à un risque ESG matériel sous les contraintes des obligations fiduciaires des investisseurs. Ensuite, sur la base des éléments de preuve tirés du procès Exxon, nous avons examiné la qualification par le Juge des mesures de gestion des risques mises en place par un investisseur en matière de leur efficacité. Nous avons ensuite comparé cette interprétation de la doctrine judiciaire par rapport au choix optimal d'action de gestion tel qu'il est formulé dans le cadre du standard de la RF. Nous avons donc constaté qu'il existait un décalage entre ces deux qualification d'un même choix de gestion. Nous avons expliqué ce désalignement par l'existence d'une

incertitude relative à l'efficacité d'une mesure de gestion du risque et par une aversion à cette incertitude exprimée par le Juge (la doctrine judiciaire) dans sa qualification de l'efficacité d'une telle mesure. Nous avons établi qu'une telle interprétation dit *averse au risque* par la doctrine judiciaire incite à un choix sous-optimal de mesures de gestion des risques par un investisseur face à un risque ESG; tandis que le choix optimal serait défini par la règle générale de responsabilité dit *neutre vis-à-vis le risque*. Nous avons ensuite constaté que ce désalignement identifié dans le cas du procès Exxon révèle un problème général caractéristique de l'ensemble des litiges de ce type (notamment, les cas de *stock drop* sous le standard de RF de la loi ERISA appliquée aux ESOP). Par conséquent, nous avons généralisé notre observation à l'ensemble de ces cas de litige et avons démontré que ce désalignement engendre les coûts sociaux à différents niveaux de la chaîne de valeur juridique de la RF. Nous avons ensuite conclu en proposant une réforme permettant d'aligner le standard de responsabilité par la doctrine judiciaire avec la norme de responsabilité optimale, afin de donner aux investisseurs un signal unique leur permettant d'appliquer des mesures de précaution efficaces, c'est-à-dire de choisir une mesure de gestion optimale face aux risques ESG matériels.

Notons que le concept d'incertitude par rapport à l'efficacité d'une mesure de précaution (de gestion des risques) n'a pas encore été abordé dans les travaux académiques sur la responsabilité fiduciaire des investisseurs. L'étude de cas du procès Exxon nous a fourni une nouvelle lecture de la RF et a révélé ce nouvel élément qui, combiné à la matérialité des risques ESG, représente le fondement du processus de décision des investisseurs régi par la règle de la RF. Ainsi, nous affirmons que le processus de décision global d'un investisseur dans le cadre de la RF présenterait le schéma suivant:

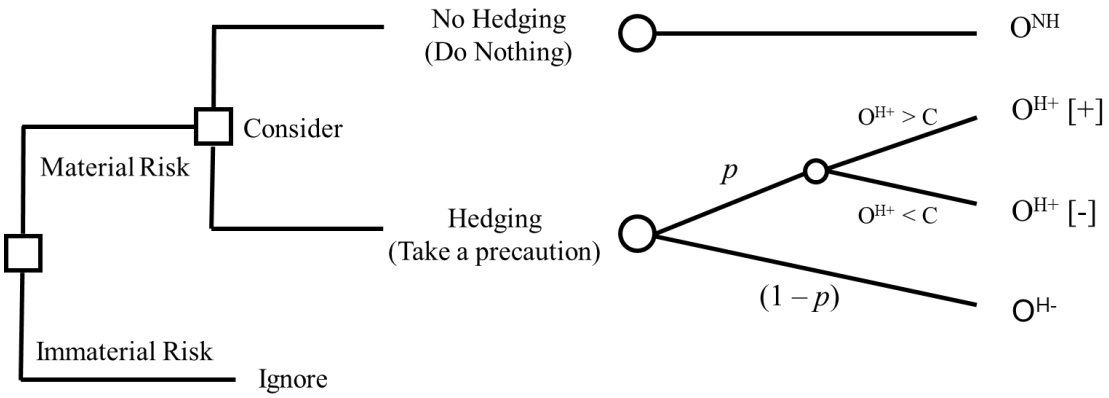

Figure 1. Arbre de décision d'un investisseur sous les contraintes de la RF face à un risque ESG et en présence de l'incertitude concernant l'efficacité de la mesure de précaution (risque d'échec d'une action de gestion de risques) avec la prise en compte du coût de la précaution. L'arbre de décision est conçu conformément aux exigences actuelles du standard relatif aux obligations fiduciaires des investisseurs.

Nous avançons donc que cet élément devrait être pris en compte dans la définition de la responsabilité des investisseurs et donc dans la définition de la règle juridique de RF.

3. Implications en Matière de Politique Economique

A travers notre travail de recherche nous avons constaté que l'interprétation la plus répandue de la responsabilité fiduciaire des investisseurs actuellement est celle fournie par la loi américaine, étant donné que la norme de la RF représente, à la base, un concept du droit anglo-saxon (Common Law). Nous constatons aussi une dynamique d'harmonisation des exigences du standard de RF dans les systèmes de régulation étudiés sur la base de la RF de Common Law. Ainsi, tenant compte de ces observations nous déclarons que dans le cadre de notre recherche portant sur la réforme de la RF dans l'UE et sur le cas de litige relatif à la RF aux Etats-Unis, certains de nos constats et résultats liées à la gestion des risques ESG par les investisseurs sous les contraintes de leur RF pourraient être généralisés.

En particulier, nous considérons que le régulateur européen pour la création d'une règle européenne de RF des investisseurs pourrait être informé (à travers l'étude du litige américain relatif à Exxon) de l'importance de la prise en compte de l'efficacité d'une mesure de gestion des risques pour la définition de la responsabilité des investisseurs dans le cadre de leur RF. Dans ce cas, si le régulateur européen avait pour objectif de favoriser une gestion appropriée des risques ESG (reflétée dans des mesures de précaution efficaces face à un risque ESG), il devrait considérer la neutralité vis-à-vis le risque de non-efficacité d'une mesure de gestion dans la formulation de la norme de RF et du standard de responsabilité y liée. En outre, les États membres de l'UE devraient être informés sur ce sujet afin de pouvoir transposer et mettre en œuvre la norme de RF ainsi formulée dans leur contexte national de manière efficace.

De l'autre côté, aux Etats-Unis, le régulateur des plans de retraite (le *DOL*, i.e. *Department of Labor* ou Département du Travail) ainsi que le régulateur judiciaire (la Cour Suprême des Etats-Unis) pourraient utiliser ces mêmes informations pour tenter de remédier à des jugements inefficients dans les cas de litige de type ERISA ESOP (équivalents au cas d'Exxon). La situation est devenue aujourd'hui un véritable problème, énonçant clairement les preuves de l'inefficience des décisions rendues dans ces affaires par le Juge sur la base de la doctrine judiciaire américaine relatives à la loi *ERISA*. Dans le but de rétablir les incitations de précaution optimales pour la gestion des risques liés aux investissements, nous préconisons que le Juge adopte une attitude neutre vis-à-vis du risque d'inefficacité d'une mesure de précaution dans sa qualification d'une telle mesure au tribunal.

En ce qui concerne la définition de matérialité relative aux facteurs de risque ESG, nous notons que ce concept a été évoqué pour la première fois dans le contexte de la proposition de régulation européenne en tant que l'un des éléments déterminants la RF des investisseurs. Cependant, le régulateur européen n'a pas explicitement spécifié ce qui définit la matérialité d'un facteur de risque ESG. Notre étude a tenté de résoudre ce problème en fournissant une définition possible de matérialité des risques ESG dans le contexte de la règle de la RF des investisseurs. Si le régulateur européen souscrit à l'interprétation de la matérialité des risques ESG telle qu'elle se présente aujourd'hui dans le

cadre des contraintes légales de la RF (c'est-à-dire lorsque les risques ESG sont assimilés à des risques financiers et que leur matérialité est comprise comme l'impact financier d'un risque sur les investissements) la formulation de la règle de la RF incluant les risques ESG énoncée dans la proposition de régulation est appropriée. Toutefois, si l'objectif réglementaire de cette proposition était d'encourager les investisseurs à prendre en considération les interprétations de la matérialité des risques ESG autres que purement financières, comme celle liée aux externalités négatives des activités d'investissement dans l'économie réelle ou autres, la règle de la RF devrait être revue en profondeur.

4. Perspectives de Recherche

De nombreuses questions concernant le concept de la RF incluant la gestion des risques ESG méritent d'être approfondies. En relation directe avec notre projet de recherche, nous pourrions évoquer plusieurs sujets qui pourraient être étudiés plus en détail dans des futurs travaux de recherche. En particulier, en ce qui concerne la définition de la matérialité des risques ESG, les diverses définitions de la matérialité des risques ESG, y compris celle relative à la prise en compte d'externalités négatives dans l'économie réelle, laissent beaucoup de place à la recherche. La question suivante serait de savoir comment ces interprétations pourraient être incorporées dans le concept juridique de la RF des investisseurs, quels seraient les conséquences ainsi que l'intérêt général d'une telle intégration. Aussi, d'autres incitations juridiques ou économiques pourraient être conçues à la place de la RF incluant les risques ESG comme potentiellement plus efficaces pour inciter les investisseurs à la gestion des risques ESG. Un vaste domaine de recherche représente également la question de l'efficacité des mesures actuelles de gestion des risques ESG, laissant la place à la conception de nouvelles méthodes de gestion et à l'analyse quantitative des résultats de gestion de ces risques. La présence d'une grande incertitude dans ce domaine souligne la nécessité d'améliorer encore les méthodes de gestion spécifiques aux risques ESG. Tous ces champs de recherche potentiels ne comptent à l'heure actuelle que des solutions assez incertaines et précoces nécessitant un développement.

En nous rapprochant de l'analyse économique du droit (*Law & Economics*) nous pourrions également poser des questions de périmètre global, telles que la conception d'incitations réglementaires pour la gestion des risques ESG par les investisseurs et, plus généralement, l'introduction des préoccupations de développement durable dans la régulation financière au niveau mondial. Ici, on traiterait plusieurs problèmes caractéristiques de l'analyse économique du droit comme le degré de précision ou d'imprécision d'une règle de droit, sa formulation optimale et ses conséquences sur le comportement des investisseurs, etc. Une autre question importante, comme nous l'avons montré dans le **Chapitre 3**, concernerait l'attitude vis-à-vis de l'incertitude (aversion pour le risque ou neutralité vis-à-vis du risque) dans la formulation du cadre juridique pour les activités d'investissement durable et responsable. Notamment, sous l'angle de l'incitation des investisseurs à la prise de décision optimale d'investissement et de gestion des risques.

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Sommaire

To say that a man is a fiduciary only begins analysis; it gives direction to further inquiry.

SEC v Chenery, 318 US 80, 85-86 (1943)

GENERAL INTRODUCTION

During recent years, academics and market practitioners have regularly raised the question of extending investment risk management towards inclusion of more information about economic risks and opportunities related to targeted investments. Many research works introduced multi-criteria decision-making strategies related to corporate performance evaluation and enhancement of portfolio selection and management allowing for a wider analysis of the conditions and sources generating risk and return[2]. In its turn, the financial industry adopted new techniques of quantitative investment analysis (with the use of quantitative analysis and big data bringing the rise of fintech solutions). This is mostly due to two particular tendencies we can observe today on the financial market: extensive critics of the limits of the main investment theory, i.e. of the Modern Portfolio Theory (MPT) and appearance of new risks untypical for traditional risk management, i.e. risks related to sustainable development and climate change.

As for the first tendency, the critics today go beyond the already highly contested hypothesis of market efficiency, by attacking the integrity of the financial concepts and tools offered by the MPT. With the MPT being negatively judged for its conceptual limits in terms of its capability to represent realistic markets and investors' behaviour, new analytical frameworks, particularly, behavioural economics and finance have been progressively appearing. In parallel, the emergency to account for new externalities related to the climate change and global social issues (like inequalities, sanitation, etc.[3])

[2] *See* J.Spronk et al., Multicriteria Decision Aid/Analysis in Finance, in *Multiple Criteria Decision Analysis*, S. Greco et al., Springer New York, 2016, pp 1011-1065.

See also C. Zopounidis, M. Doumpos, Multi-criteria Decision Aid in Financial Decision Making: Methodologies and Literature Review, *Journal of Multi-Criteria Decision Analysis*, 2002, pp 167–186.

See also P Xidonas et al., A multiple criteria decision-making approach for the selection of stocks, *The Journal of the Operational Research Society*, Vol. 61, No. 8, August 2010, pp 1273-1287.

[3] Among the 17 United Nations Sustainable Development Goals representing the main global issues to tackle in the coming century are: No Poverty; Good Health; Gender Equality; Clean Water and Sanitation; Affordable and Clean Energy; Reduced Inequalities; Responsible Production and

has strongly risen leading towards the appearance of the theory of sustainable growth and towards a progressive introduction of this concept into the social and economic policies across the world. It is within these two global movements (the critics of traditional economic tools and the development of sustainability approaches) that the need to create the concept of Sustainable Finance emerged. Also, by this time, it was largely acknowledged that public investment sector is not enough to make a transition to sustainable development. That is why the inclusion of private sector of finance became necessary and inevitable[4] for Sustainable Finance to work. Thus, based at first mostly on ethical grounds[5] and, thus, attracting 'activist' investors, responsible finance movement then started to attract more traditional investors[6] and now is progressively being transformed into a new doctrine of investment risk management. This global movement acquires the name of Sustainable and Responsible Investment (SRI). Very promptly, institutional investors[7] (hereafter 'investors') due to big volumes of their investments were targeted by this global SRI movement; as

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Consumption, Climate Action, Biodiversity Protection (Water and Land), Peace, Justice and Strong Institutions, etc. Find all the relevant information here: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

[4] For instance, for combatting climate change developed countries have made a commitment to jointly mobilize USD 100 billion a year in climate finance by 2020 for climate action in developing countries. (*See Private finance for climate action Estimating the effects of public interventions*, Policy Perspectives, OECD, 2017) At the same time, the World Economic Forum projects that by 2020, about $5.7 trillion will need to be invested annually in green infrastructure, much of which will be in today's developing world. (Figures quoted by World Resource Institute, see more here: https://www.wri.org/our-work/project/climate-finance/climate-finance-and-private-sector)

These goals are unattainable without participation of private finance.

[5] Besides, the investment strategies based on ethical considerations, for instance the exclusion of sin stocks has already been known and practiced among investors for years.

[6] The COP 21 (the UNFCCC 21st Conference of Parties (COP21) held in Paris in December 2015) that brought Paris Agreement was the turning point, which gave to investors and public authorities around the world a strong signal for mobilisation.

[7] Institutional investors are organisations that invest on behalf of its members (beneficiaries). They are considered to be professional investors (they are assumed to be more knowledgeable and better able to protect themselves) and thus face fewer protective regulations. There are generally six types of institutional investors: pension funds, insurance companies, hedge funds, mutual funds, commercial banks and endowment funds. (See Investopedia).

As they invest on behalf of their members (beneficiaries) they are bounded by some specific duties vis-à-vis their members, particularly, the duty to act in the best interests of their beneficiaries. These duties are called Fiduciary Duties.

massive investments are needed to allow the transition towards sustainable development. Their engagement became crucial for the success of the SRI, besides, from the investment management perspective, they are considered to be highly exposed the emerging long-term systemic sustainability-related risks (like climate change) in their investment management. Among institutional investors, a particular focus was put on pension schemes. This is due to the fact that throughout the duration of the existence of a retirement scheme, pension funds are exposed to all potential risks in the investment management value chain in the short, medium and long terms. The important fact is that their exposure to various risks and their capacity to manage these risks have direct consequences for a vast number of people in most countries, as institutional investors, namely pension funds, manage capital on behalf of their members (beneficiaries) and are bounded to do it in the best interests of the latter.

With institutional investors, including pension funds, playing a role of representatives and managers of the global wealth of populations, they found themselves at the crossroads of the polemics on the limits of traditional investment theories and the need to assure the transition towards sustainable growth. To respond to these movements and to prepare institutional investors to such transition, the concept of introduction of sustainability-related risk factors (also called extra-financial or Environmental, Social and Governance-related (ESG) factors) into the general risk management process applied by investors[8] was developed within the Sustainable and Responsible Investment (SRI) framework. In the recent years, the adoption of ESG risk criteria by institutional investors were urged by many leaders of the financial industry[9], including

[8] For example, some scholars logically found potential solutions to ESG integration in multi-criteria analysis. Tim Verheyden and Lieven De Moor (2014) present multi-criteria decision analysis (MCDA) as the methodological framework that could help the development of the SRI and its adoption by investors. Particularly, they propose a concrete approach for future research in building such a social performance indicator, which can score and classify mutual funds with respect to social responsibility.

[9] For instance, the International Financial Stability Board (FSB) created in 2015 a specific organ to develop and monitor sustainability, particularly climate change related, reporting by investors – Task Force on Climate-related Financial Disclosures (TCFD). TCFD produced its special report introducing recommendations on financial and extra-financial reporting by investors; one of the proposed tools to apply by investors in the design and monitoring of their investment strategies was climate change scenario analysis. Another organisation that focuses on how institutional investors tackle sustainability-related issues, particularly climate change, is the Institutional Investors Group on Climate Change (IIGCC). We also note the work of the United Nations Principles of Responsible Investment (UNPRI)

investors themselves[10]. The sustainability-related information in the form of ESG risk factors has now been gathered, analysed, classified (as properly as possible) and integrated by investors in the most convenient way currently known in their investment and risk management processes. On this basis, the question of a compatibility of the ESG risks information and associated particular management tactics with the traditional investment and risk management decision-making approach by investors was raised. In the attempt to answer this question, institutional investors turned to the law applicable to them and regulating their activities. One of the main legal rules that frame institutional investors' investment and risk management decision-making is the duty they have towards their members, their beneficiaries – the Fiduciary Duty (FD).

The Fiduciary Duty of institutional investors is a specific legal standard of conduct, which obliges institutional investors (for instance pension funds) who manage and invest the capital of the members (beneficiaries) of their funds to do it adequately, professionally and in way that will benefit their beneficiaries as those expect it. The legal rule of Fiduciary duty has one main goal, that is to protect beneficiaries of institutional investors' funds, for instance members of a pension scheme, from mismanagement actions by institutional investors (called 'fiduciaries'), i.e. from inappropriate and inexpedient investment and risk management decisions. This protection is ensured by a set of rules that establish the framework of investment management decision-making for institutional investors, thus, governing risk-taking and risk management by investors[11].

The Fiduciary Duty (FD) of investors is a complex concept that encloses several elements (several duties) and that is defined in a different way in

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that provide research on ESG and SRI as well as propose a dedicated sustainable and responsible investment reporting tool.

[10] For example, one of the most influential speeches in the domain was delivered by Mark Carney, the Governor of the Bank of England at Lloyd's of London in 2015

[11] We discuss further the concept of Fiduciary Duty and its main constituents in **Chapter I** of the thesis; we then continue to develop its analysis in **Chapter II** and **Chapter III**.

different national legal frameworks. The complexity of the definition of the common general FD standard for investors in today's international context of investment management (for instance, various country-members of the EU community have their own definitions of FD) represents some issues even for traditional investment and risk management. Now, with the stated movement towards integration of new elements of risk (sustainability-related ESG risks considered in the SRI framework) in the investment and risk management decision-making process by institutional investors the definition of investors' FD and, particularly, the acceptance of these new risk elements within the legal framework of FD brings about additional questions. These questions rise on the ground of fundamental differences of these new ESG risk factors from the traditional financial ones in terms of their nature (multiple interpretations of ESG risks, measurement difficulties, high uncertainty, long-term of occurrence for some of them) and in terms of a potential for their adequate and effective management by investors (quite uncertain).

Today, a group of the leading SRI investors intensively promote the inclusion of ESG risks management as part of the Fiduciary Duty requirements for investors, by stating the importance of these risk factors not only for investment and risk management of their funds, but also for general contribution into the global sustainable development of economies. However, far from SRI industry leaders and, it is even the case of some lead financial institutions, many investors see ESG integration into investment risk metrics to be in many ways inefficient and even inappropriate under their FD. They adopt a quite reluctant attitude towards this issue, which in their eyes raises many questions related to potential effect of ESG strategies on investment performance, and relevance of ESG information to investment decision and its general utility, including the capacity to produce changes in real economy and the relevance of such changes for investment management. Even with the progress of the academic research in this field showing at least neutral (if not positive) effect of ESG integration on generation of return or proving the possibility to decrease downside risk through application of ESG analysis, many market practitioners are still averse to

implementation of such strategies[12]. As a result, the global mobilisation of private investment sector, specifically of institutional investors, for the adoption of SRI strategies has been obstructed. This situation called for some radical measures in terms of support and promotion of the SRI movement. Some clearly said that *legal reform is seen as the only effective method of engaging all investors*[13]. Richardson (2009) even advocated for legal sanctions on financial institutions as a means of promoting SRI. Haigh and Hazleton (2004) suggest collaboration between the leading SRI investors and government lobbying that [pricing of ESG related] *externalities through legal reform can increase the amount of responsible investment being undertaken by institutional investors*[14]. Here, the fiduciary duty framework pushed by the leading SRI investors was found to be the most suitable for the realisation of this goal. For example, the French pension institution ERAFP was one of the first investors to pass to 'all SRI' (its total assets were managed with an ESG approach). Its CEO at that time, Philippe Desfossés, actively supported the idea of the importance of ESG risk management as part of the fulfilment by the fund of its fiduciary duties.

Today, the integration of ESG risk factors within the investment risk management process as part of fiduciary duty has become one of the core arguments for the further development SRI and for the consideration by investors of ESG risk factors. Particularly, this argument is grounded on the more and more frequent qualification of the ESG risks as *material* (or significant enough to be non-negligible) for institutional investment. This point of view becomes more widespread in the light of the growing awareness of the investment professionals, public authorities and even general public about risks and opportunities that sustainable development could present today for individual investors and global economic stability and growth. However, various financial practitioners understand differently the concept of *materiality* as applied to sustainability risks. Not for all of them the materiality of ESG

[12] *Investment governance and the integration of environmental, social and governance factors*, OECD publication, 2017

[13] *See* J. P. Hawley et al., *Cambridge Handbook of Institutional Investment and Fiduciary Duty,* Cambridge University Press, 2014

[14] *See* J. P. Hawley et al., *Cambridge Handbook of Institutional Investment and Fiduciary Duty,* Cambridge University Press, 2014

risks is well proven and even well comprehended as many issues related to quantity and quality of ESG data, poorly developed (as in many cases just nascent) metrics as well as uncertainties surrounding applied methodologies, persist and complicate the analysis. In this light, if conventional financial risk factors seem regular, ordinary in use offering (as it seems) relatively predictable outcomes within the traditional financial decision-making, ESG risks appear to some investors as quite unreliable and even irrelevant. Also, investors consider multiple interpretations of materiality of ESG risks that range from pure ESG risk exposure of investments (the closest interpretation towards traditional financial risks) to the impact of ESG risks in real economy (on the ground)[15].

As a result, the idea of consideration of ESG integration as a necessary part of risk management under investors' fiduciary duty obligations evokes some concerns[16]. If it is possible to say that the FD requirements allow for ESG risks consideration by investors in their investment and risk management processes as long as these ESG risks are material, then the question of how to qualify such materiality rises in the light of the existence of its multiple interpretations by investors. Another issue of such ESG FD concept relates to the identification of what efficient and effective management strategies could be available to investors today in the face of sustainability risks. Under this perspective, the compatibility of ESG integration with the general decision-making framework under the fiduciary duty rule is not clear, as it is not clear what implications ESG risk management actions would have for the liability of an investor under the FD standard. With the general confusion and lack of perspective reigning today on the matter as well as a call for urgent legal and economic measures supported by many professionals we state a need for a

[15] Recently, UNEP FI started a work on the analysis and definition of EFG fiduciary Duties of investors. They consider impact in the real economy as part of the FD requirements for investors. The project called "A Legal framework for Impact" is ongoing. See the information on this project here: https://www.unepfi.org/investment/legal-framework-for-impact/

[16] In response to the consultation on the mandatory inclusion of ESG risk consideration within the framework of investors' fiduciary duties launched by the EU Commission in November 2017:

See also Article *European investment professionals reject forced consideration of ESG,* by Rachel Fixsen, IPE, October 2018

See also Article *PensionsEurope: 'Commission should not dictate ESG rules'*, by Susanna Rust, IPE, May 2018

clarification analysis of the subject as the basis for being able to move forward towards appropriate legal and / or economic measures.

To understand the scope of the current FD framework as applied to risk management and the possibilities to consider ESG risk factors within it, a positive analysis of the issue is required. As a result, in this research, we clarify the current FD standard based on the study of the legal practice in the EU and the US and analyse it in terms of obstacles and unexpected solutions it offers when it comes to ESG risks management. Particularly, we consider a newly coming definition of the investors' FD standard by the EU regulator (the standard is under development from 2018 to 2020). One of the central concepts of the EU formulation of the FD standard allowing a consideration of EGS risk factors is the so-called *materiality* of these factors. Given a high uncertainty about the interpretations of this term as applied to ESG risks that was stated earlier, we specify, by constructing a theoretical model, which one among all possible definitions of materiality of ESG risk factors is actually allowed under the constraints of the current interpretation of the FD standard. We then conclude that all other potential definitions of materiality would not be allowed under FD and would require a profound reform of the FD standard. On the other hand, we argue that the materiality constraints of the FD standard could however be settled to include more ESG risk factors if qualitative materiality definition was explicitly allowed and specified in the EU FD rule. We note that until now the materiality of ESG risks in the context of the FD investment and risk management was never analysed with the use of the economic theory. Here we present the first theoretical formulation of the materiality constraints of the investors' FD standard as applied to ESG risk factors. To design this formulation we reconstruct the decision-making process of institutional investors in the face of new ESG risks within these constraints by using available tools of the economic and decision-making theory.

In order to perform a full analysis of the issue, we then complete the research on the ESG FD standard by examining one of the very first litigation cases (the first publicly known) related to the respect by an investor of the Fiduciary Duties towards her beneficiaries in the face of an ESG risk. The case concerns Exxon Mobil, an oil and natural resources company, which as an

investor manages retirement plans for its employees. The employees alleged that Exxon did not fulfil its fiduciary duty towards them as the company did not consider ESG risks in the management of the retirement plan what could have brought additional loses to the plan's beneficiaries, i.e. employees. We present this very recent case, which was closed in 2019, in detail further in the thesis. Through the examination of this litigation case, we explore the standard of FD liability and propose the first essay of its modelling based on the available tools of Law & Economics theory. As a result, we come up with the first analysis (in the ESG FD research literature) of the importance of the effectiveness of a risk management action in the definition of ESG FD liability and regulation standards. This question is rarely considered as part of the FD analysis, however, as we discovered, not only it contributes to the definition of investors' liability under their FD, but also raises some general questions about the effectiveness of investors' risks management and the efficiency of the risk management regulation as applied to investors. Through the study of the Exxon case, we reveal that an expected effectiveness of a risk management represents together with risks materiality the two fundamental criteria of investors' liability under the FD standard. Through this analysis we conclude that some of the current FD liability standards (namely in the US FD law) are inconsistent with the legal interpretation of the FD rule and thus require correction. We thus offer a possible formulation of such corrections and argue that these changes could allow more material ESG risk factors to be managed by investors within the FD framework of investment and risk management.

In general, we encourage further use of the economic theory and analysis tools the studies on the newly coming SRI-related regulation (namely, in the European Union), as such approach brings light on concrete constraints and opportunities of the financial regulation landscape as well as would allow to design SRI-related rules and standards in a more efficient way. For the moment, we state that such use is quite limited in the literature on the SRI-related regulation, due to the novelty of the subject of analysis (the regulatory effort in the field of SRI has started quite recently). Globally, here, with the help of Law & Economics, we attempt to achieve the general objective of this thesis, which is to determine the place of ESG risk factors within the investors' FD standard and to formulate recommendations on potential improvement of the integration

of ESG risks into the current legal FD framework. We will present further in more detail how we structure our research to achieve this general objective; but first, let us clarify the relevance of the research topic and the particularities of its background – risk management.

1. Economic Context and Current Importance of the Research Topic

1.1 Relevance of the Research Topic

Several reasons motivated the choice of the subject of the thesis. One of them relates to the current global socio-economic changes (the rise of the concerns around inequality, natural resources scarcity, etc. throughout the world) and the rise of the sustainable development concept. The other one regards a particular industry and its place in the transition towards the system of sustainable development, namely, the growing importance of ESG strategies applied to investment and risk management and the attempts to include such strategies in the legal framework of investors' fiduciary duties. Finally, one of the major reasons that evoked our interest towards this field is its analytical potential in terms of its large scope of research and the ability to bring new insights into the current legal, financial and law and economics theory.

1.1.1 Investors' ESG fiduciary duty in the moving regulatory landscape.

Several legislative procedures has been launched in the EU on the subject of sustainable finance since the development of the related EU Action Plan in 2017. One of the major regulatory proposals supported by some financial industry professionals (and opposed by others) concerns the mobilisation of institutional investors for stronger development and implementation of sustainable investment strategies. Such mobilisation is viewed achievable

through a better disclosure by investors of their SRI and ESG approaches and actions as well as through the establishment of a general legal requirement to consider ESG as part of investors' fiduciary duties.

These two measures are explicitly stated by the EU Commission Proposal on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 issued on the 24th of May 2018, which at this moment is awaiting a validation by the EU Parliament. As for ESG fiduciary duty of investors, and, particularly pension plans regulated by the EU Directive (EU) 2016/2341 (IORP), the Proposal provides specific amendments to the Directive searching to *specify how IORPs make investment decisions and assess risks* [taking into account] *environmental, social and governance risks*. The amendments are proposed in the dedicated 'delegated acts'. As a result, the ESG FD rule applied to investors (pension schemes) is formulated as follows: t*he investment decisions and the assessment of relevant risks, including environmental, social and governance risks, should be made in such a manner as to ensure compliance with the interests of members and beneficiaries*[17].

Such proposition of the EU is intensely debated among national representatives and the financial industry. As it was stated before, many support the general initiative on disclosure. Article 4 of the Proposal states as related to transparency of the integration of sustainability risks that *financial market participants*[18] *shall include descriptions of the following in pre-contractual disclosures*: *(a) the procedures and conditions applied for integrating sustainability risks in investment decisions; (b) the extent to which sustainability risks are expected to have a relevant impact on the returns of the financial products made available; etc.* However, the stumbling stone of the proposal is the fiduciary duty of investors, especially the amendment of IORP Directive in the domain of pension plans regulation. A seeming consensus on the matter was reached in March 2019 with the

[17] *See* EU Commission Proposal on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341, 24 May 2018, 17 p.

[18] In general, the regulation covers five financial services sectors, including investment funds, private and occupational pensions, and individual portfolio management.

establishment of a preliminary agreement on the Proposal in trilogue discussions, now it is up to the EU Parliament[19].

In parallel to such legislative developments in Europe, the legal system in United States confronts a different type of issues related to the interaction between ESG integration movement and investors' fiduciary duties enforcement. In 2016, the current and ex-employees of Exxon Mobil Corporation launched a lawsuit against Exxon for the breach of their fiduciary duties in the management of the private pension fund managed by Exxon for the account of its employees. After several attempts throughout 2017, 2018 and 2019 to prove that Exxon did not act on climate change-related risks, did not consider these risks in the pension plan management and thus, allowed the fund to suffer losses caused by its exposure to these risks, the case is now dismissed. However, this case represents one of the first claims of this nature in the world signalising the rise of the climate and sustainability litigation and its extension towards pension funds' liability field governed by the US federal Employee Retirement Income Security Act of 1974 (ERISA).

Today, institutional investors and, particularly, pension schemes, find themselves in a complex situation of the ongoing redefinition of their responsibilities vis-a-vis the beneficiaries and participants of their funds. The subject of the thesis is analysed in this dynamic legal context with an attempt to provide an answer to the main question of how ESG integration articulates with the fiduciary obligations of investors.

1.1.2 Investors' ESG Fiduciary Duty in the context of financial theory and Law & Economic

[19] See Article *EU sets out plan for investor sustainability disclosure rules*, 7 March 2019, by Susanna Rust, IPE: *It is not clear what was agreed, if anything, with regard to whether the regulation should allow for delegated acts under the new EU pension fund legislation, the IORP II directive. The European Commission's proposal for the regulation, unveiled in May last year, provided for this, but the EU pension fund industry has lobbied against it. The European Parliament went into negotiations with the Council having stuck with a provision for delegated acts under IORP II, while the member states dropped it from their version. The EU press officer could not say what had been agreed about this.*

The integration of sustainability concerns into the substantive law[20] (civil or criminal, public or private) is a very large and fertile research field. However, the application of the principles of such research to a very specific and technical sphere as investment and risk management is very recent. Still, the question of investors' behaviour in relation to sustainable development appears to be multifaceted and rich in applications. Particularly, this problematics is situated on the crossroads of several research fields: legal theory, financial theory, sustainable development models as well as environmental and human rights law and economics. As a result, the analysis of investors' SRI activities can bring insights on the functioning and potential evolution of financial and investment management systems as well as contribute to the development of economic mechanisms that would serve the legal practice in the design of effective and efficient incentives to investors for sustainable behaviour. We show further in this **General Introduction** that the subject of investors' ESG FD is particularly interesting due to the multitude of questions that it raises simultaneously about mechanisms proper to the economics and to the law.

In this thesis, we aim to enhance the comprehension of this subject as a junction of various problematics in economics and law. In this research work, we seek to provide a springboard for a progressive design of efficient legal and economic case for sustainable investment.

1.2 General Economic Background of the Subject of the Thesis

As it was stated earlier, the subject of this thesis is constructed on the intersection of finance, sustainable development and law and economics analysis. In order to situate our readers better in the complex context that gave origin to the studied problematics, we expose the general risk management framework used by investors and develop on the economic and historic reasons of its current form and particular features. We then show that the introduction of sustainability concerns into investment management brought about a different risk paradigm. Finally, we demonstrate how the need to settle the debate

[20] Substantive law is the set of laws that governs how members of a society are to behave (See Wikipedia).

between these new ESG risk management approaches raised the question of investors' fiduciary duties and what conceptual difficulties related to ESG FD are to be solved before moving to the design of economic and legal measures applicable to investors. But first, let us situate the subject of the thesis in relation to the current literature on ESG and SRI finance and investment practices, which represent the primary domain of the study. Today, the domain of Sustainable and Responsible investment is a highly prolific source of academic research due to the eclecticism of topics, approaches, methods, data and analytical points of view that could be adopted in this field.

The biggest question in the SRI research is the question of performance. This problem has been occupying so far the minds of most actors of financial industry as well as of the most academics. It continues to be a central issue in SRI research today with the majority of academic publications dedicated to it or at least connected to it; as it was stated by Cox et al. (2004), that this question of ESG performance lies at the heart of the definition of the pattern of institutional investment. Due to the multitude of academic and professional research on the subject, several meta-studies have been produced lately offering an extensive overview of the issue. For instance, Friede, Busch and Bassen (2015) produce a large meta-study based on a review of the results of more than 2,200 studies from 1970 through 2014, and show that sustainability (ESG) factors are generally associated with positive effects on corporate financial performance. Some recent publication, like Monti et al. (2018) confirm and extend this conclusion, by finding evidence of a positive, i.e. a risk-reducing, effect of ESG performance of corporates on risk (the authors used measures that capture systematic, idiosyncratic, downside and extreme risks; they also concluded that a financial crisis can increase the risk-reducing effect of CSR). Some of these studies go further and trace the performance-related aspects of a particular ESG factor taken separately and recently the more and more authors turn their eyes to that question of sector-specific financial materiality of this or that ESG factor (Lydenberg et al., 2010; Lydenberg, 2012; Kahn, Serafeim & Yoon, 2016; Grewal, Serafeim & Yoon, 2016, etc.).

The general tendency in the analysis of ESG factors today could be characterised as positive as an important part of studies find non-negative

results in terms of effects of sustainability factors on the corporate financial performance. However, there are still some research works that demonstrate negative results on the matter from different angles of analysis. For instance, recently Espahbodi (2019) found that integration of ESG priorities into corporate strategy does not have a significant effect on investors' price assessments or investment allocation; what is true regardless of the trend in the company's financial performance. Another example, Landi and Sciarelli (2019) find that despite the application by investors of ESG criteria in their stock-picking operations, it does not generate any positive and statistically significant impact in terms of market premium. The authors state that that SRI is not yet a *reliable fundraising tool*. Given that investors do not price corporate ESG performance on the market, listed companies cannot be rewarded with a premium for a good ESG performance. Some other studies on the portfolio management level also doubt a financial premium of SRI investment management (for example, Amenc and Le Sourd, 2010).

Within the majority of the studies institutional investors play a particular role in terms of application of SRI investment strategies. Today, these investors represent one of the main 'engines' for the development of the SRI market due to their general long-term exposure and responsibilities vis-à-vis their beneficiaries in terms of capital management. The question of the performance associate to SRI investment strategies is particularly important in light of the current debate on whether the integration of ESG factors is in compliance with the fiduciary duty (FD) of investors (for instance, Richardson, 2007; Sandberg, 2011; Hoepner, Rezec and Siegl, 2011; Schanzenbach and Sitkoff, 2019, who adopt more philosophic and legal analysis methods to study the issue).

This is where we attempt to bring light with the present research work. This thesis contributes to the clarification of the question of the new ESG fiduciary duty concept (i.e. the fiduciary duty requiring ESG risks consideration by investors), which is highly disputed today among market professionals and, since 2019, by some regulators. Particularly, if the previous studies on the investors' fiduciary duties (as you will see further in the **Chapter II** and **Chapter III** of the thesis) offer a global overview of some general characteristics of the fiduciary duty concept, this thesis aims to go into the

details about what exactly ESG FD standard would look like under current legal constraints. To achieve this conceptual goal we consider in this research two very concrete legal frameworks (EU and US) and complete the legal and philosophical analysis of the matter (usual for this research subject) with economic approach by using some economic analysis tools. We note that Law and Economics could bring interesting solutions for a better analysis of newly appearing sustainable investment regulation. And, if quite few Law and Economics research works are dedicated to this subject at the moment, we hope to contribute with this thesis to the launching of a dynamics in the economic analysis of actual and potential SRI regulation.

Coming back to the subject of this thesis, we note that the fiduciary duties of institutional investors are understood first of all from the risk management perspective. This, as we will see further, implies some investment management constraints and particular investment choices by investors.

1.2.1 Current perspective on the investment risk management

Today, the concept of risk is one of the central notions in the modern financial theory with the idea that the performance of an asset is an increasing function of risk. The integration of sustainability risk factors, such as climate change, social inequalities-related risks or others, into the professional investors' decision-making is thus subject of constraints of very particular and objectively quite rigid conditions of the financial market functioning dictated by interrelated economic and legal tools that are currently available, accepted and applied throughout this market. Particularly, the risk management process by investors not only highly regulated but also based on some concrete common economic tools that largely predetermine the decision-making framework and, thus, the outcome of this process.

In case of institutional investors, the process of risk management depend even more on the defined economic and legal standards as due to their financial weight these investors contribute to financial stability of the economy as a whole. Besides, by managing savings, these investors owe some concrete fiduciary obligations to their beneficiaries: current and future. To present in a

more thorough way the system of investment risk management we will focus in this research on one particular type of institutional investors – pension plans. Pension schemes represent a perfect example of an institutional investor with the total set of fiduciary obligations and exposed to the most of risk factors throughout investment-management value chain. Here, we consider both defined benefit and defined contribution systems[21]; however, we will not present a separate analysis for each of these pension systems.

The central objective of risk management by a pension fund is at least to keep the purchasing power that the managed savings have at the beginning, and if possible, to increase it. Under this perspective, an investor in general faces two major risks: the financial risk (loss of purchasing power in the long run) and the volatility (or market risk). The first one reflects the risk to lose some or all of invested capital, while volatility refers to short-term (daily) variations in terms of investment value. Generally, in case of a pension plan management it is the financial risk or the risk of losses that is to be provisioned in opposition to the institutional asset manager, who is concerned, first of all, by the volatility of his fund compared to market representative benchmark – market index. However, in order to assure an optimal management of a pension scheme, which is exposed to requirement of short-term operational provisions (operational and legal constraints applied to pension institutions[22]), both volatility and financial risk should be concerned (however, to different degrees), despite the evident contradiction between these two measures and approaches they require[23].

The more short-term constraints an investor has, the more he will be focused on the general yearly perspective to cover annual payments. As a result,

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[21] We note however that *in countries where funded pension systems dominate, the gradual shift from defined benefit retirement savings plans to more and more individualized defined contribution schemes is based on the future pensioner choosing the investment instruments for the management his savings*.

See DE LAULANIE J.-F., *Les placements de l'épargne à long terme* (FR), Economica, 2003, 160 p.

[22] The constraints that an investment institutional may face are: to provide a particular amount of annual income to cover operating and remuneration costs as well as ensuring payment of current pensions; to provide capital stream to cover different hedge ratios or some precautionary requirements for losses; management expenses coverage

[23] Due to differences in management horizon (short-term for volatility and long-term for financial risk management), an optimal management if these risks will differ and imply different strategies including the choice of securities and other investment instruments.

for such investor it becomes increasingly difficult with each new constraint to consider financial risk of real losses in purchasing power of the participants of the plan. This leads to an increase in the investor's attitude towards short-term risk – he becomes more risk-averse, seeking to procure constant and secure return to cover the burden of constraints. In the long run, such investor can difficultly achieves an optimal diversification and an optimal investment structure in terms of the diversity of invested asset classes despite the importance of proper alignment of investments with liabilities (i.e. payments due as future pensions) taking into consideration their maturity terms. There is typically a conflict between short-term risk and the need for long-term management.[24]

Particularly, the legal solvency constraint that pension plans face (as other institutional investors), i.e. the obligation related to the level of pensions' funding ratio (a ratio of a pension assets to its liabilities), being officially monitored on an annual basis[25] induces predominantly short-term constraints requiring higher risk-aversion even if the global objective of Solvency law will always concern long-term market stability[26]. Besides, the solvency rules are put mostly in terms of volatility (nominal risk)[27].

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[24] Original in French: *On est typiquement en présence d'un conflit entre le risque à court terme et la nécessité d'une gestion à long terme*. (*See* DE LAULANIE J.-F., *Les placements de l'épargne à long terme* (FR), Economica, 2003, 160 p.)

[25] *See* Article 29 of the Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs).

[26] *See Article ESG will not happen if Solvency II comes to pension funds: Leppala*, by Susanna Rust, IPE, 29 November 2018 (Matti Lappala is the CEO of PensionsEurope, a European organisation representing national associations of pension funds and similar institutions for workplace and other funded pensions.). *PensionsEurope has been concerned with a trend in European regulation "to harmonise everything on a short-term time horizon", he said. The Solvency II directive, which covered half of the European pension market, had pushed pension insurance companies "almost totally" out of equity investments. In June a survey by the trade association InsuranceEurope found that almost half (48%) of insurers across Europe said Solvency II had led them to invest "less than optimum amounts in equities, long-term bonds, private placements or unrated debt". (…) He hoped that "in the end there will be a re-evaluation of the financial market regulatory framework"…*

See also Article, *How long is long enough?*, by Philippe Desfossés (at that time CEO of ERAFP, one of the biggest pension funds in France), September 2018: *About combatting the short-termism: One way to reduce the pressure would be as a first move to decide that we, large institutional investors; we will not report any more on a yearly basis our performance but average it on the last 4 or 5 years.*

[27] DE LAULANIE J.-F., *Les placements de l'épargne à long terme* (FR), Economica, 2003, 160 p.

In this context, investors would be progressively shifting towards risk management reasoning in terms of volatility[28], based on the classical mechanisms of the Modern Portfolio Theory (MPT) and, particularly, of the Capital Asset Pricing Model (CAPM). Thus, considering these observations, we can state that, generally, the current risk management framework applied by investors can be characterised by three main features:

(1) Short-term perspective;

As it was stated, the focus on market risk and the need to cover short-term expenses related to various actual constraints imposed on pension funds bring the short-term perspective into the pension plans' risk management. Moreover, the short-termism is supported by the fact that the shortfall risk for pension funds is being increasingly hedged through tighter regulation requirements on funding ratios (*so that in a balance sheet perspective assets are sufficient to cover liabilities*)[29] with the monitoring procedures being conducted over shorter periods of time. Consequently, even external asset managers hired for a particular pension mandate are appointed and monitored on their short-term relative performance. Besides, with the objective to reduce agency problems (information asymmetries, etc.) these asset managers are mandated in average only for three years, with their compensation being linked to their quarterly performance compared to a relevant market index[30]. In this context, some believe that institutional investors should have more long-term view and more patience; the latter being tightly connected to the risk attitude dictated by the common risk management framework as applied by pension schemes today.

(2) Averse attitude towards risk;

[28] Article, *How long is long enough?*, by Philippe Desfossés (at that time CEO of ERAFP, one of the biggest pension funds in France), September 2018: *(…) it is wrong to use volatility to assess the risk a pension fund portfolio bears. What's the significance of a daily variation of the portfolio valuation for an investor managing money with a time horizon of 30/40/50 years. Could we, at least, convince regulators to pay attention to the absurd situation that the following example can exemplify?* (The article is available on LinkedIn).

[29] *See* Franzen, D., Managing Investment Risk in Defined Benefit Pension Funds, *OECD Working Papers on Insurance and Private Pensions*, No. 38, OECD, 2010, 60 p.

[30] *By contrast, fund managers of state-sponsored pension plans can have much longer tenure, up to ten years*. (See RICHARDSON B. J., *Fiduciary law and responsible investing: In nature's trust*, Routledge, 1st ed., 2015, pp. 160-165)

Generally, we observe that despite the global definition of pension funds as investors whose main concern relates to assuring the coverage of pension's liabilities in the long run[31], the pension fund regulation became not only more short-term oriented but also more risk aware and safety-focused. The recent financial crises of 2000-2003, 2008, has shifted attention to the risk management with the global goal of the regulation in this sphere being to ensure global stability. Thus, despite the fact that the risk-taking capacity is a core element of pension funds' strategic allocation and their capacity to cover liabilities, *changes in the regulatory and accounting standards increasingly impede the risk-taking capacity of DB pension funds*[32]. As a result, investment strategies become generally more risk-averse that, in reality, they should have been based on pension funds specific risk profile and management goal. However, such regulatory developments are explained by the theoretical origins of the global risk management framework imposed to institutional investors, particularly, pension schemes.

(3) Reliance on 'conventional' quantitative performance-related risks due to general application of the Modern Portfolio Theory.

It is important to note that, nowadays, pension funds use risk management frameworks analogous to those applied by other financial institutions like banks, asset managers and insurances. Particularly, such risk measures and tools as Value-at-Risk (VaR) and risk budgeting are used by pensions plans within their global Asset-Liability Management (ALM) systems. However, the criticism towards the application of such 'common to all' risk management procedures to pension funds grows today and aims mostly at the origins of these approaches that naturally restrict pension funds to quite limited, precise and not always appropriate for them risk consideration and management.

The development of the actual global position of the financial industry and the regulators on risk management started in 1990s with the release of JP

[31] The risky assets like equity are considered important in the fulfilment of this objective by offering better return in the long-term.

[32] *See* Franzen, D., Managing Investment Risk in Defined Benefit Pension Funds, *OECD Working Papers on Insurance and Private Pensions*, No. 38, OECD, 2010, 60 p.

Morgan's RiskMetrics in 1994 and the introduction of Basel Amendment to Basel Accord in 1996. In both cases, the definition of and the attitude towards risk were based on the idea of risk pricing taken within the theoretical framework of mean-variance optimisation of risk-based return – the Modern Portfolio Theory (MPT)[33]. The Basel Amendment of 1996 was almost completely structured around the MPT assumptions in order to provided banks, which during those years became increasingly involved in trading, with a new risk management strategy axed on the market risk. Thus, the implementation of VaR was spread around banking industry. Then, with the development of AML model in the insurance domain and with the entering of insurance companies into the equity market (and, as a result, an increase in their exposition to market risk) market risk became an integral part of insurance risk management strategies. Later, with the critics of insufficiency of risk measures applied to institutional investors, and, particularly, to pension funds, various legislative initiatives claiming stricter risk management by financial institutions were implemented across countries. They hardened the risk management requirements for all market agents and extended market risk management framework to pension funds. *Starting at larger pension funds, modern portfolio theory concepts were increasingly used in deriving the strategic asset allocation and managing investment risk*[34] (within ALM models gradually assimilated by pension funds) *with* RiskMetrics by JP Morgan being extended to pension funds in 2005[35]. Consequently, the subsequent developments in the risk management approaches by institutional investors, including pension funds, are based on this single theoretical framework.

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[33] *See* more information on the history of modern risk management in Franzen, D., Managing Investment Risk in Defined Benefit Pension Funds, *OECD Working Papers on Insurance and Private Pensions*, No. 38, OECD, 2010, 60 p.

[34] *See* more information on the history of modern risk management in Franzen, D., Managing Investment Risk in Defined Benefit Pension Funds, *OECD Working Papers on Insurance and Private Pensions*, No. 38, OECD, 2010, 60 p.

[35] Franzen, D., Managing Investment Risk in Defined Benefit Pension Funds, *OECD Working Papers on Insurance and Private Pensions*, No. 38, OECD, 2010: *(…) pension funds also started to calculate VaR which originates from the banking industry. In banking regulation, VaR states that the bank is 99 percent confident not to loose more than the amount of x on their trading book over the next 10 days. When the RiskMetrics extended to pension funds in 2005, this period was extended to one year to meet the requirements of pension funds' longer-term investment horizon. Also the confidence interval applied is lower. VaR is also implied in risk budgeting. Risk budgeting concepts were more recently developped for pension fudns and were used at first by large institutions.*

The critics of this general approach in terms of risk management are numerous. For instance, Campbell (2006) states two main drawbacks of this analysis: the short-term investment horizon ('*Risk budgeting with VaR on the basis of one year is probably not a great thing to do for a pension fund* '[36]) and the focus on assets only. Moreover, as we will see further, the more general question of the relevance of risk categories considered under this approach is also questioned in the light of most recent financial crises as well as with the development of sustainable finance.

1.2.2 The new paradigm of ESG risk factors management

As it was stated, sustainable investment has been developing as part of a global socio-economic imperative in the face of the rising issues related to inequalities, natural resources destruction and climate change urging to find new economic solutions. In this context, it joins multiple critics of the MPT and the related risk management framework, by challenging this approach on all of the three points presented above and by adopting a reverse attitude to risk management, which implies:

(1) Short, mid and long-term;

The significance of long-term investing for large institutions has risen to prominence after the drawbacks of short-termism and myopic behaviour were exposed in the financial crisis of 2008-2009. *The crisis highlighted badly misaligned economic incentives*[37]. Financial regulation since has attempted to provide reform for long-term stability and restore discipline in the market place. However, it is done, in many cases, on the grounds of the same traditional underlying theoretical concepts and general risk management theories. In this context, sustainable investment strategies bring the question of the evolution of

[36] *See* more information on the history of modern risk management in Franzen, D., Managing Investment Risk in Defined Benefit Pension Funds, *OECD Working Papers on Insurance and Private Pensions*, No. 38, OECD, 2010, 60 p.

[37] MONK A., SHARMA R., SINCLAIR D. L., *Reframing Finance: new models of Long-term investment management*, Stanford University Press, 2017, 216 p. (*See* here for more details on the potential constraints to long-term investment and risk management).

approaches requested by many market agents. It does not directly offer the solutions to the stated problematics, but serves an engine to the general movement of alternative theoretical and practical risk management and investment models.

Sustainability risk factors or (as they are often called) environmental, social and governance-related risks (ESG) are not characterised by some particular term of occurrence as are financial risk factors. Besides, these risks for investments vary largely according to the country, industry, market segment, company size and even a company itself. They differ for equity and debt instruments and are quite particular as related to public issuers[38]. At the same time, some of them, like climate change-related risks, present clearly long-term consequences for investments and, thus, should be considered within a risk management framework allowing a consideration of risks in the long run. In this case an institutional investor, a pension fund, should be capable to accept the necessary (however, adequate in relation to the investment profile of the pension fund) levels of short-term risk, i.e. *short-term volatility and potential permanent capital loss, and not to divest from long-term investments in the face of market pressure*[39].

(2) Risk neutrality;

The importance to neutrally and appropriately identify the integrity of risk factors faced by a pension fund lies at the core of the sustainable investment framework. An institutional investor is expected to reach a balance between the short-term and long-term imperatives by considering both market risk (volatility) and financial risk (risk of real losses in terms of purchasing

[38] *See* the examples of ESG risk factors in **Appendix 1**.

[39] SHARMA R., Sovereign Wealth Funds Investment in Sustainable Development Sectors, Working Paper, Stanford University, 2017, 25 p.

See also MONK A., SHARMA R., SINCLAIR D. L., *Reframing Finance: new models of Long-term investment management*, Stanford University Press, 2017, 216 p.: [The general current pressure] *faced by investors to maintain funded status in the short term and report to the market on a short-term basis results in many investors having a low-risk appetite.*

power of pension plan's beneficiaries)[40]. Thus, the legal constraints imposed to investors should reflect this position.

(3) Consideration of systemic risks and qualitative risk factors as well as factors associated with the contribution into the real economy.

With such a complex approach to risks within sustainable investment frameworks, the question of redefining of risk categories rises again. In a pursuit of the goal to determine *fair value* of investments, these risk management frameworks imply new categories of risks unfamiliar to the conventional financial approaches. In general, we can formulate three additional categories of risks that ESG analysis allows to consider together with the classical financial quantitative variables:

- Extreme event and systemic risks;
- Qualitative risks factors and intangibles;
- Risks associated with negative externalities occurring in the real economy due to the investment made (real world impact or impact on the ground).

For example, within the conventional investment risk management framework, systemic risks are usually considered to be exogenous events producing *adverse effects* [(like large losses to or failures of large financial institutions)] *on a large fraction of members of a financial system*[41]. Even being largely regulated by micro and macro prudential regulation, they are assimilated by investors to MPT-specified systematic risk, i.e. *undiversifiable risk often referred to as market risk to which even well-diversified market participants are exposed*[42]. As a result, such risks are not treated by the traditional risk metrics, leaving investor inactive or actionless in their face[43]. Sustainable investing

[40] *See* the general representation of today's risks faced by financial institutions in **Appendix 2**.

[41] BAKER H. K., FILBECK G., *Investment Risk Management*, Oxford University Press, 2015, 712 p.

[42] BAKER H. K., FILBECK G., *Investment Risk Management*, Oxford University Press, 2015, 712 p.

[43] RICHARDSON B. J., *Fiduciary law and responsible investing: In nature's trust*, Routledge, 1st ed., 2013, pp. 160-165: *Although institutional investors can be attentive to financial risks associated to securities in their portfolios, they largely overlook systemic risks. The legal system has also contributed to market practices like this. While the emerging popularity of passive investment management, based on tracking of the holdings of a market index, can reduce market turnover and myopic behaviour, they*

opens a question of the importance of the consideration of these risks as well as other new types of risk[44] in an investment decision-making, particularly, when it comes to such long-term and market representative investors as pension funds.

Today, qualitative ESG risk factors reflecting social and general governance quality of an invested entity are gaining in importance as markers of the quality of an investment opportunity. Their development matched the movement of increasing consideration by investors of *intangibles*, or intangible capital of an invested company, in investment risk management. Following large research and development of practical approaches in the domain of companies' *fair value* assessment and valuation of its intangible assets[45], new methodologies of ESG risks identification and monitoring appeared stating importance of these risk metrics for a proper evaluation of investments. Nowadays, some professionals clearly identify ESG risks as intangibles qualifying them as an integral part of the total risk of a business entity. We note that intangibles risks as perceived today refer to risks that cannot be quantified using conventional risk management tools and analysis, including leadership risk, behaviour risk, global governance-related and reputation-related risks, etc. Under this perspective, ESG risks firmly fit into such classifications and definitions framework.

Other forms of risks and opportunities analyses appear today with the development of ESG considerations. Having been questioning for some time now the general approaches to investment risk management, investors turn

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augments investors' exposure to systemic risks. As institutional investors increasingly rely on similar investment and risk management strategies, the ensuring herd-like practices amplify investors' exposure to catastrophic market collapses.

[44] European Parliament, Committee on Economic and Monetary Affairs, 2018/0179 (COD), 2 august 2018 Draft Report on the proposal for a regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 (COM(2018)0354 – C8 – 0208/2018 – 2018/0179(COD)): Definition of ESG risks: "sustainability risks means the financial or non-financial risks on both the short and the long term, linked to ESG factors (…) (page 16); Assessment of sustainability risks – an assessment of new or emerging risks and risks related to the depreciation of assets due to regulatory change (page 28).

[45] Whereas some intangible assets, like copyrights and licences, brands and leases, may be assessed others, like the composite reputation-related value and related risks cannot.

progressively to the other side of risk management – risks posed by investments to real economy. The question of possible internalisation of externalities of investments in terms of their effects and contribution to real economies is raised by many market professionals attempting to develop new *impact investing*[46] strategies. In many cases, such strategies are designed in an attempt to respond to global imperatives stated through the UN Sustainable Development Goals (SDG) or the objectives of the Paris Agreement (2015)[47].

The risk management dimension represents a core element of institutional investors' (and particularly, pension funds') investment policies and strategies that determines asset allocation and, in the end, ensures capital preservation as well as growth of the future purchasing power of their end-investors, i.e. beneficiaries. The ubiquitous reliance of the financial sector on the MPT, which became the primary mode of operation in the economy through the risk control at the portfolio level with the objective to guarantee returns, may in itself create market-level risks that threaten financial and economic stability. Besides, with the regulatory attempts for harmonisation of these conventional approaches to investment risk management throughout financial industry, namely, in Europe, tend to accentuate the stated problematics related to the MPT implementation and risk perception in terms of volatility predominantly. As a result, it may also tend to block the way to the application of the new risk management approaches and methods that bring new potential categories of risks and definitions of risks' materiality (for instance, some consider today that impact on real economy should be viewed as part of a risk's materiality).

The need for a kind of conciliation between these different risk management conceptions: the traditional one and the emerging alternatives, was

[46] Impact investments are investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return.

[47] The UN SDG name the priorities in terms of global sustainable and equitable socio-economic development to achieve throughout the world by 2030.

The Paris Agreement signed by multiple countries at the UN Conference of the Parties (COP) 21st session in 2015. The signing of this agreement became a turning point in the mobilisation of public and private sectors for the achievement of the goal to limit climate change and associated environmental, social and economic consequences. The Paris Agreement aims to limit climate change to below 2 degrees by 2100 in comparison to the preindustrial temperature levels.

at the source of the call of some professionals for regulatory measures, particularly, the inclusion of ESG risks consideration as a requirement under the fiduciary duty (FD) standards applied to institutional investors, including pension funds.

1.2.3 An unsettled place of ESG risks in investor's fiduciary duties

Today, many financial market professional are quite enthusiastic about the choice of a regulatory method for further introduction of ESG methods into investment management due to the global scope and of legislative measures and their potential application to the integrity of institutional investors' community. Investors' fiduciary duty standards appear in this context as one of the most appropriate regulatory tools in the quest for the global mobilisation of institutional investors for integration of sustainability risks into their investment and risk management strategies. However, it is not clear how the three stated aspects of the traditional risk management and the corresponding ones of the ESG risk approaches could interact and could be combined within one and the same investor's decision-making process governed by concrete legal FD rules of conduct.

The current common FD standard, based on the two capital duties of prudence (care) and loyalty[48], evaluates prudence using the risk management framework provided inter alia by the MPT. Namely, the duty of prudence states that fiduciaries should act with due care, skill and diligence; avoiding speculative and unduly risky investments; and, invest in a suitably diverse portfolio of investments. Particularly, the level of prudence and its compliance with the associated duty of care is assessed through the consideration of the actual investment performance volatility on the portfolio level[49]. In such legal context, and in relation to the facts expressed earlier on the general application of the MPT throughout financial market, it seems difficult to conceive a

[48] *Overall, the most important fiduciary duties are the duty to act prudently and the duty of loyalty, namely to act in accordance with the purpose for which investment powers are granted*. (Sandberg, 2011)

[49] *See* HAWLEY J. P. et al., *Cambridge Handbook of Institutional Investment and Fiduciary Duty*, Cambridge University Press, 2014, pp 24-27.

possible extension of the FD investment and risk management decision-making framework from the conventional approach characterised by short-term and uniquely quantitative risk representations towards various-term, qualitative ESG risk management conception.

Today, despite some quite successful attempts to quantify ESG factors[50], quite few ESG risks could be quantitatively measured and valued within the traditional risk variables related to risk-adjusted return of investments. Thus, their degree of importance (or relevance or *materiality*) seems to represent subject of different methods of appreciation, in general, qualitative ones. As so, *the nature of the* [information] *item is an important determinant of materiality, and it is likely that the relative importance of (…) items varies significantly*[51]. Besides, in case of long-term ESG risk factors, the short-term FD orientation due to its reference to the MPT complicates further the qualification of such risks as important or material for investment and risk management decisions based on the conventional theories.

The fiduciary duty of loyalty as applied to institutional investors, including pension plans, asserts that an investment and risk management decision must be made in the best interests of the beneficiaries and with the achievement of an impartial balance between the conflicting interests of different beneficiaries. This could imply a consideration of long-term risks and opportunities, particularly, in order to secure the capital of future beneficiaries versus current ones, who are being currently provided with pensions. However, given the presented financial and legal constraints established on the basis of the conventional risk management process, such consideration of long-term is equivocal.

[50] For example, Kahn et al. (2016) show that firms with good ratings on material sustainability issues can significantly outperform firms with poor ratings on these issues. To the extent that these firms are part of the investment portfolio, the latter could exhibit the same characteristics.

[51] MESSIER W. F. et al., A Review and Integration of Empirical Research on Materiality: Two Decades Later, *Auditing: A Journal of Practice & Theory*, Vol. 24, No. 2, November 2005, pp 153-187: *there is evidence that the nature of the item is an important determinant of materiality, and it is likely that the relative importance of (…) items varies significantly.*

Moreover, the focus of the traditional risk management frameworks on short-term is strongly related to the infringement of risk attitude balance in terms of management of long-term and short-term related risks and the general tendency towards risk-aversion. Being more concentrated on the daily management of the market risk, investors are induced to make investment and risk management decisions that would directly relate to the exposure to this risk mainly and, due to various operational and legal constraints, express risk-aversion towards it. As a result, an investor may choose immediate and stable gains at the expense of the optimal future returns (in the long run); or, an investor may accept an immediate but sure and concrete loss instead of a more efficient but uncertain final outcome, with such decisions being perfectly legitimate under the applicable FD rule. An institutional investor, who does not follow the established FD principles of conduct, may be held responsible for this. With the investors' liability being at stake, it is fundamentally important to clarify the role and the place of ESG risk management within the investment and risk management decision-making framework under the FD rules, before introducing any legal requirements on the matter.

The need to formulate explicitly a decision-making model of a typical investor under the FD standard in order to clarify the place of ESG risk factors in such typical decision motivates this research project. Here, we do not aim to criticise the MPT or to introduce a potential alternative to the MPT. In this thesis, our objective is to provide a proper understanding of the exposed problematics of the ESG FD as well as to formulate clearly the possibilities of consideration of ESG risks in the decision-making process as expected within the FD legal framework. We produce a model of the ESG FD standard as it can be created under the current legal and practical risk management constraints; we highlight all the possibilities of ESG risks integration into the current FD framework according to the EU and US law and thus explore pitfalls and prospects of ESG FD. Our research work thus contributes to the theoretical studies of investment and risk management decision-making in the context of the FD legal constraints and in the face of ESG risks.

2. DECISION-MAKING UNDER UNCERTAINTY AT THE BASIS OF THE ANALYSIS

With the objective to analyse the decision-making process of institutional investors as regards ESG integration within the FD legal framework, we quite naturally chose to rely in this research on the theory of decision-making under uncertainty. In fact, this theory allows to bring out the place of ESG integration strategies within the common investment and risk management process formulated through the modern FD standards by formalising the constraints imposed on an investor's decision by the FD rules as well as the possible margins of ESG risk factors consideration.

2.1 Decision-Making under Uncertainty and Substantive Law Analysis

Substantive law is the set of regulation that governs how economic agents are to behave. Generally, in the law and economics theory this legal area is naturally studied using the tools of the theory of decision-making under uncertainty. Substantive legal rules are, thus, seen as information vectors that help to shape the information environment in which economic agents are situated. They constitute legal environment, which together with economic constraints construct a general framework for decision-making by an economic agent, bringing the analysis towards the decision theory in the presence of legal rules. In this context, the application of the decision-making theory under uncertainty allows to explain the individual as well as aggregated behaviours in reaction to the incentives constituted by the legal standards and associated enforcement measures (for instance, sanctions). Under this perspective, the use of this theory is necessary to be able to specify how different legal standards modify the set of opportunities of agents and, therefore, their behaviour. On the other hand, the implementation of the decision-making theory under uncertainty brings light on the motivations that stimulate the application of legal rules by an economic agent, by explaining a rational calculation process aimed at maximising an agents' subjective utility given their preferences lying at the core of such

application. Thereby, the behaviour of institutional investors as stimulated by the FD standards represents a special case for such analysis that, in this thesis, we will develop from the point of view of both the concrete expected investor' behaviour encouraged by the provided legal FD constraints and the enforcement conditions necessary for the optimal application of the FD standards by investors. Moreover, this analysis is particularly interesting in case of the integration of new elements, namely, ESG risks considerations, within the studied decision-making problem in the presence of FD rules.

2.2 Investors' ESG FD and the theory of decision-making under uncertainty

The theory of decision-making under uncertainty offers a particularly convenient framework to design a setting allowing a coherent systematic analysis of the case of ESG risks consideration within the general risk management system by investors under the FD requirements. This theory proposes adequate and flexible tools that enable us to consider within the same analytical structure both the decision-making by investors in the face of ESG risks under the constraints of the FD standard and the process of jurisdictional qualification of the optimal behaviour towards these risks under the requirements of the FD rule. Particularly, the decision-making theory instruments allow to formalise the investment and risk management decision-making structure as it is imposed to investors by the means of the FD legal rule. Such formal representation brings light on the perception of risks by fiduciaries under the FD standard and the processes related to risks identification and, consequently, to their management. Also, the use of the decision-making theory offers a necessary framework to analyse the concordance of existing liability standards with the conduct incentives of the legal rule of FD in the context of the evaluation of risk management decisions performed by investors. Thus, this theory seems to be quite useful for the analysis of the two main questions raised in case of ESG risks consideration within investment and risk management processes by investors under the FD standard:

(1) To what extent could ESG risk factors be considered within investors' investment and risk management under the FD rule? And, namely, which of the ESG risks can be considered?

(2) To what extent does such ESG consideration coordinate with the standards of investors' liability under the FD rule?

These questions caught our attention and determined the problematics that we decided to deal with in this thesis.

3. PROBLEMATICS TREATED IN THE THESIS

As it was stated earlier, this thesis presents an analysis based on an interdisciplinary branch of academic literature. The subject treated in this research is situated at the crossroad between Law and Economics, investment decision and risk management as well as sustainable development and responsible investment. However, in general, the subject of the thesis can be characterised as being predominantly developed under the positive Law and Economics approach with the use of the theory of decision-making under uncertainty.

Various current literature presents developments on the global economic and legal constraints of investment and risk management decision-making process of investors. Today, with the rise of the sustainability concerns within the financial industry and with attempts of public authorities to mobilise private capital for the transition to sustainable socio-economic development, the importance of this analysis increases. In this context, one particular problematics increasingly gains attention of practitioners and academics – the decisions by investors under the constraints provided by the FD standards of conduct and their compatibility with the progressing adoption by investors of sustainable and responsible investment strategies (SRI). The questions studied are various and quite precise. For instance, Schanzenbach and Sitkoff in their recent article on the Law and Economics of ESG Investing by a Fiduciary (2018) offer an extensive analysis of the current FD legal framework in the US

and show that ESG investing could be permissible under trust fiduciary law only if such strategies improve risk-adjusted return of investments. Earlier, the similar conclusion was formulated by Jay Youngdahl (2011). Other questions related to sustainability and systemic risks consideration in the FD framework, long-termism and intergenerational equity as well as the MPT dominance in the interpretation of the FD rule are raised by Claire Molinari, Roger Urwin, Joakim Sandberg, Danyelle Guyatt, etc.[52].

These research and analytical works provide valuable insights into the legal fiduciary duties framework as applied to institutional investors: its limits, general constraints and potential barriers to ESG integration. However, in order to advance in the understanding of investors' FD and of its implications in terms of investment and risk management decisions with the objective to formulate effective economic and legal measures in relation to ESG integration, a formal representation of the decision-making system under the FD constraints as applied to institutional investors is to be developed. In this thesis, we attempt to provide such formal representation through a constructive and thorough analysis of the two fundamental questions presented by us earlier:

(1) To what extent could ESG risk factors be considered within investors' investment and risk management under the FD rule? And, namely, which of the ESG risks can be considered?

This question, having been studied previously, however, remains open for many investment professionals. The actual conditions of ESG risk factors integration into the decision-making process of investors under the FD constraints are still viewed as ambiguous and are often misunderstood among financial industry professionals expressing various and sometimes opposing views on the matter. Besides, this question was raised with a new force in the light of the ongoing European legislative initiative to introduce a FD standard applied to institutional investors and include ESG risks consideration as part of such FD obligations for investors. This legal initiative brought a new perspective in the analysis of ESG risks management under the FD rule as the

[52] *See* HAWLEY J. P. et al., *Cambridge Handbook of Institutional Investment and Fiduciary Duty*, Cambridge University Press, 2014, 507 p.

EU legal proposal stated openly that only *material* ESG risk factors could be considered in the investment and risk management decision-making of investors under the potential FD standard[53]. From this angle, the consideration of ESG risk factors within the investment and risk management decision-making framework governed by the FD rule as applied to institutional investors, including pension funds, will be determined by the definition of the concept of ESG risks' *materiality*.

We have already discussed the difficulties related to the qualification of what ESG risk is material. These difficulties originate from multiple definitions (or an absence of a common understanding) of materiality in case of ESG risk factors (including a definition related to impact in the real economy) used by various market professionals. We also presented the general problems related to the fact that many ESG risks belong to new risk categories (systemic, intangible or long-term risks) that are very unusual, extrinsic and uncharacteristic for the conventional framework of investment and risk management by investors, the materiality of which cannot be considered or can difficultly be considered within such framework. Under this perspective, the compatibility of ESG risks consideration by investors within their decision-making under the FD standard is quite ambiguous.

Consequently, in this thesis, we aim to formalise the definition of the current FD standard accepted on the market with the objective to reveal the obstacles and some unexpected solutions it offers when it comes to ESG risks management. Given an uncertainty about ESG risks materiality interpretations, we construct a theoretical model allowing to formulate what ESG risks materiality definition is actually allowed under the constraints of the FD regulation (we base our analysis on the EU and the US legal frameworks). We

[53] European Commission, Brussels, 24.5.2018 SWD(2018) 264 final, Commission Staff Working Document Impact Assessment, Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment and Proposal for a Regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 and Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2016/1011 on low carbon benchmarks and positive carbon impact benchmarks, p.39.

The document is available here: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-5524115_en#pe-2018-3336

also argue that such definition could be enlarged towards inclusion of some qualitative ESG risk factors interpretations without breaching the FD standard. We then specify that any other interpretation of materiality would need a fundamental reform of the FD standard.

(2) To what extent does such ESG risks consideration coordinate with the standards of investors' liability under the FD rule?

The problematics of investors' liability under the FD rule in relation to ESG risks consideration was not yet discussed in the academic literature and among the financial industry. Thus, it presents an open and particularly interesting field for research on the subject of the sustainable investment (SRI) in the context of the FD. Moreover, a recent lawsuit against Exxon Mobil Corporation in the US marked a new milestone in the development of the environmental and sustainability-related litigation by extending its field towards legal cases stating a breach of investors' FD obligations. The legal claim under discussion was filed by several current and ex-employees of Exxon for losses that Exxon's private pension fund suffered due to a lack of action from the company as regards climate change-related risks. In this case, among common and well known by the theory of law and economics issues related to statement of loss, causality, etc., a very particular question of effectiveness of the decision made by a fiduciary (investor) was raised. The effectiveness of investors' final decisions and actions proved to be an important element in the statement by the Judge of a breach of the fiduciary duties by an investor. However, the question of effectiveness is rarely considered in the current literature as part of the FD analysis and is hardly ever evoked by researchers. At the same time, not only it contributes to the definition of investors' liability under the FD standard, but also raises some general concerns about what exactly investors could do in the face of ESG risks.

Through the analysis of the Exxon case, we reveal that an expected effectiveness of an ESG risk management action represents together with ESG risks materiality the basis of investors' FD liability. We also discover that some of the current FD liability standards in the US law are inefficient due to their inconsistency with the FD legal standard (rule of law) and thus require corrections. We then offer a possible formulation of such corrections.

As a result, we can state that the objective of this thesis is to provide elements of response to the two main problematics that we presented in the previous paragraphs. In order to fulfil this objective we organise this research work in a following way.

In the **Chapter I** of the thesis, we present a State of the Art on legal FD frameworks in the EU and in the US. We provide a complex analysis of the elements of the legal structure of fiduciary duties in Europe and in the US in relation to the identified problematics: definition of materiality of ESG risk factors as part of the FD legal standard and investors' FD liability with regard to the effectiveness of an ESG risk management action taken by an investor. In our analysis, we consider the achievements of the recent research on the topic and go beyond by structuring the present State of the Art as a complex and dynamic study of the elements of the two major FD legal frameworks in their development. Namely, we analyse two major recent events in the development of investors' FD standard. The first event is the publication by the EU regulator of a first in the European legal practice regulatory proposal on the establishment of a common European FD standard for investors that would potentially include a requirement to consider ESG risks. This regulatory proposal is currently under development. The second event is the appearance of the first publicly known case of litigation on the matter of non-consideration by investors of ESG risks factors under their FD in the US. We specify that clearly the question of investors' fiduciary duties in the face of ESG risks is not considered in these two legal frameworks in the same manner. Specifically, it is the EU law that raised the subject of ESG risks materiality as a key element in the definition of investors' FD in the face of such risks. The US legal framework responds to the ESG risks management problematics mostly through application of the US FD-related judicial doctrine; in this context, the effectiveness of an action by an investor against ESG risks comes to the forefront for the definition of investors' FD liability.

Following this analysis, we conclude that the existing legal frameworks of FD present clear lacunas and, thus, alone do not provide sufficient elements and foundation for an efficient treatment of the formulated questions. Particularly, when it comes to the concept of *materiality* as applied to ESG risk

factors, we observe through the analysis of the recent EU regulatory proposal on FD that with the existence of multiple interpretations of this notion by different investors (stated earlier) the legal proposal does not directly specify a materiality definition compliant with the FD standard. This vague character of the legal rule leaves space for various interpretations of investors' legal responsibilities in terms of ESG risks consideration in their investment risk management. Therefore, we identify the need for a further analysis of the materiality concept within the FD legal framework and consider the use of economic instruments in order to establish a concrete definition of materiality as allowed under the EU FD regulation. Also, we establish through the analysis of the recent US litigation case that the *effectiveness* of a risk management action taken by an investor in the face of an ESG risk is a decisive element for the qualification of investors' FD liability. However, the legal interpretation of this element in the US FD law is quite imprecise and calls for an urgent clarification as otherwise this could potentially lead to judicial errors. Having identified these problematics, we then attempt to provide first solutions to them in the following Chapters of the thesis. For that, we develop an abstract representation of the stated problematics and analyse them using the tools of economic theory, which allow us to state unambiguously the place of ESG risks management within investors' FD legal framework.

In the **Chapter II** of the thesis, we use the theory of decision-making under uncertainty in order to reconstruct the decision-making process by an investor under the constraints of the EU fiduciary duty legal standard of conduct. Based on that, we develop a concrete definition of materiality of ESG risk factors to demonstrate what definition is actually allowed by the current FD legal standard as well as to demonstrate the limits it imposes on investors in case of ESG risks management. On the other hand, we identify some opportunities for non-quantitative ESG risks consideration under the FD standard with the introduction of the qualitative materiality definition within the FD legal framework. We also find that some aspects of ESG risk factors, particularly long-termism (i.e. the occurrence of outcomes associated with an ESG risk in the long-term), could (despite the general misbelief) be considered under the current FD rule. We thus propose a global framework and general principles for the consideration of material long-term ESG risks under the FD

constraints. We note that until now the materiality of ESG risks in the context of the FD investment and risk management was never analysed with the use of the tools of the economic theory. Here, we present one of the first attempts of a theoretical formulation of the materiality constraints under the investors' FD standard as applied to ESG risk factors. By that, we respond to the first problematics identified in **Chapter I**.

In the **Chapter III** of the thesis, we provide a Case Study based on the analysis of the first legal case in the domain of ESG risks management by an investor under the US FD standard – the case of Exxon Mobil (2016-2019). For that, we continue the analysis of the decision-making system under the FD rule in the context of the theory of decision-making under uncertainty by treating this time the question of investors' liability and the level of precaution in relation to the effectiveness of material ESG risks management. For that, we formalise the choice by investors of a risk management action in the face of an ESG risk and the further qualification of this action by the judge through the FD liability standard. We find that this qualification is misaligned with the US FD legal rule due to a risk-averse formulation of the liability standard applied by the judge. We then identify that this misalignment generates social costs on different levels of the FD legal value chain and propose a reform of the FD liability standard. We note that these findings appear to be relevant for and applicable to all risk factors, ESG and conventional financial ones.

Through the examination of this litigation case, we explore the standard of FD liability and propose the first essay of its modelling based on the available tools of Law & Economics theory. As a result, we come up with the first study (in the ESG FD research literature) of the importance of the effectiveness of a risk management action in the definition of ESG FD liability and regulation standards. This question is rarely considered as part of the FD analysis, however, as we discovered, not only it contributes to the definition of investors' liability under their FD, but also raises some general questions about the effectiveness of investors' risks management and the efficiency of the risk management regulation as applied to investors. Through this analysis we conclude that some of the current FD liability standards (namely in the US FD law) are inconsistent with the legal interpretation of the FD rule and thus

require correction. We thus offer a possible formulation of such corrections and argue that these changes will allow for more material ESG risk factors to be managed by investors within the FD framework of investment and risk management. By that, we respond to the second problematics identified in **Chapter I**.

We generally reveal in our research that an expected effectiveness of a risk management represents together with risks materiality the two fundamental criteria of the definition of investors' responsibilities in terms of ESG risks management under the FD legal standard. We note that Law and Economics could bring interesting solutions for a better analysis of newly appearing sustainable investment regulation. And, if quite few Law and Economics research works are dedicated to this subject at the moment, we hope to contribute with this thesis to the launching of a dynamics in the economic analysis of actual and potential SRI regulation.

Globally, our analysis of the European legislative initiative as well as of the discussed US litigation case (the first of such nature) brings new perspectives to the research on the investors' decision-making under the legal constraints of the FD standard. We provide a clarification of the place of ESG risks management within the framework of the investors' FD standard and thus contribute to the analysis of the modern standard of fiduciary duty as applied to institutional investors in the face of the socio-economic imperative to integrate sustainability risk factors into their investment and risk management decision-making process.

Moreover, the research contributes to the analysis of the ongoing reforms launched by the European Commission concerning sustainable finance and investors' FD as well as the latest litigation cases under US jurisdiction opening on the responsibility of institutional investors in relation to ESG risk factors management. Besides, at our knowledge, this study is the first that considers the subject of the FD and ESG risks consideration from the point of view of investors' liability; the question of ESG risk management effectiveness is also raised for the first time in the literature covering the ESG FD topic. In addition, based on a parallel analysis of the US and the EU legal frameworks, this research aims at contributing to the comparative study of FD standards. By that,

our work lays the ground for a potential further conceptualisation of ESG FD and provides the necessary basis for the future development of efficient and effective economic and legal measures as regards ESG risks management within the investors' decision-making under their FD.

To achieve the goal of this research we rely on the legal and philosophical analysis of the problem raised (that represents a usual approach for treating this research subject) and complete it with an economic approach and some instruments of the economic analysis. Namely, we explore the existing tools and models in the economic analysis to illustrate how economics could bring new solutions for a more extensive study of the SRI regulation, namely FD standard, which was so far mainly considered through legal research. As it was stated earlier, the field of the economic analysis of law represents a huge potential in terms of better analysis of newly appearing sustainable investment regulation and litigation as these two aspects of market development are placed today at the core of the future development of ESG investment sector. With quite few academic works having treated this subject so far from this perspective, we aim to contribute with this thesis to the launching of a dynamics for the use of Law and Economic analysis of SRI investment and ESG risk management regulation.

I. STATE OF THE ART ON INVESTORS' FIDUCIARY DUTIES AS REGARDS ESG RISKS MANAGEMENT IN THE RECENT EU AND US LEGAL PRACTICE

As we stated in **General Introduction**, the consideration of sustainability risk factors, such as climate change or social inequalities, within investors' decision-making is very much conditioned by the application of widely-accepted risk management theories and approaches. However, and most importantly, we must note that there is another element that actually determines the opportunities for ESG risks to be considered by investors – the applicable legal framework of investors' fiduciary duties.

Consequently, risk management is governed by the particular constraints of both the current financial approaches by the markets and legal standards accepted and applied throughout this market[54]. The two economic and legal frameworks form what we could call *traditional operational framework* currently imposed to and, thus, used by investors. We already considered the economic context of investors' decision-making in the General Introduction, where we described the dependence of the current financial activities on the neoclassical economic approaches in finance, particularly the Modern Portfolio Theory (MPT) and the uniform risk management methods; the latter being rashly spread throughout the global financial system, however still relatively crude. These economic frameworks seem to be valued and supported by financial regulators (especially, in the view of the past and recent financial crises) and thus find their reflection in the current regulation and, in particular

[54] These current economic and legal tools are interrelated and evolve together through the development of financial markets' practices.

in the today's interpretation of investors' duties. Such interconnection between economic and legal frameworks firmly leads institutional investors[55] towards a quite definite standardised decision-making pattern.

In this context, the possibilities to consider new 'untraditional' risk factors by investors, namely sustainability risk factors, within the established conventional decision-making pattern governed by the FD law is questionable and demands for some clarification exercise. The question is the legality of ESG risks consideration by investors within their risk management and investment decision-making as regulated by their Fiduciary Duties. To answer this question, it is not enough to understand the pitfalls of the economic context of investors' decision-making stated above and presented in the General Introduction, but it is fundamentally important to pass through a comprehensive study of the legal framework of investors' Fiduciary Duties and of the place of ESG risks within it.

This problematics starts to attract more and more researchers even if the literature on the subject is still rather scarce. The academic research on the legality or compliance of ESG risk factors consideration by investors within their risk management and investment decision-making under the standard of investors' fiduciary duties is quite limited today. The most comprehensive viewpoint on the problem was given quite recently by Max M. Schanzenbach and Robert H. Sitkoff (2019). Through a fundamental examination of the principles and interpretations of the FD standard in the context of the US legal practice, they arrived to a conclusion that ESG risk factors consideration in investors' decision-making *is permissible only if two conditions are satisfied: (1) the fiduciary believes in good faith that ESG investing will* [improve investments'] *risk-adjusted return; and (2) the fiduciary's exclusive motive for ESG investing is to obtain this direct benefit.* Similarly, according to the paper by Susan N. Gary et al. (2018) ESG risks consideration by investors is only allowed under the fiduciary duty law (FD) when sustainability risk factors could affect risk-adjusted returns on investments. The same viewpoint is advanced by

[55] Institutional investors: pension funds, insurance companies, asset managers, etc. These big investors manage together huge masses of financial flows (trillions) and, thus, are considered as the pulling force on financial markets and important actors for national economies.

M. Bernard-Royer (2009)[56], P. Thornton and D. Fleming (2011)[57] or, again, by Jay Youngdahl (2011)[58]. All of them conclude, after a conceptual examination of the FD legal standard, that, just like in case of financial risk criteria, ESG risks should be managed if they imply financial consequences for investments. This viewpoint was also expressed in the famous Freshfields Report (2005) on ESG risk consideration in the investment decision-making under FD standard produced by the United Nation Environmental Project (UNEP) Finance Initiative (FI). The Report as well as another publication produced by UNEP FI Asset Management Working Group (AMWG) in 2006 advance that ESG risk factors should be considered under FD of investors if they impact the financial performance of investments. Interestingly, this point of view is also supported by such important professional organisations as the European Fund and Asset Management Association (EFAMA) and the Organisation for Economic Co-operation and Development (OECD).

Almost all of these research works are based on an implicit assumption that ESG risks should be assimilated to traditional financial risk factors. In most cases, the analysis is performed under this global interpretation of ESG risks factors without consideration of the differences in nature and measurability between financial risks and sustainability risks as well as differences in their management approaches. Only quite recently Schanzenbach and Sitkoff (2019) attempted to consider the consequences of sustainability risks not only for investments but also for real economy and, as a result, rejected this aspect of ESG risks as non-compliant with the FD of investors.

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[56] BERNARD-POYER M., *L'investissement socialement responsable: Vers une nouvelle éthique*, Arnaud Franel, 2009 (French Edition), 158 p.: « *Sur la responsabilité fiduciaire en rapport avec ce qui est écrit dans le rapport Freshfields le filter ESG participle à la gestion de ces risques. Dans cette perspective* [gestion des risques élargie], *FD et SRI iraient de pair.* »

"On the fiduciary responsibility in relation to what is stated in the Freshfields report, the ESG filter participates in the management of these risks. From the perspective of broader risk management, FD and SRI would go hand-in-hand." (English Translation)

[57] In their book *Good Governance for Pension Schemes*, 2011

[58] *Thus, it is fair to argue that, at the very least, when examining legal authorities with a view as to how ESG considerations may fit in, ESG principles may be accorded weight so long as they "are motivated by proper purposes and do not adversely affect the financial performance of entire portfolio."* The author quotes Freshfields Report, (Freshfields Bruckhaus Deringer, *A legal Framework for the Integration of Environmental, Social and Governance Issues into Institutional Investment*, 2005, 154 p.).

Besides, looking for an answer to the raised question about the legality of ESG risks consideration by investors within their risk management and investment decision-making in the context of the FD law, all the stated authors examined the idea of ESG risks consideration by investors in the context of a static general FD legal framework of the common law. This legal framework has a system of general commonly accepted duties and specific legal concepts recognised in the FD legal standard in the common law system. As a result, the literature today provides predominantly a conceptual analysis of the general principles of the FD legal standard. Only quite few authors consider potential less traditional interpretations of some of these principles (Hawley et al. 2011, Richardson 2013) in relation to ESG risk factors management by investors. Besides, no consideration is given in the current literature to such issue as investors' liability in the face of ESG risks integration within the investment and risk management decision-making.

Here, we consider the achievements of the recent research on the topic, however in order to fill the identified lacunas we structure the present State of the Art as a complex analysis of the FD framework based on a different dynamic approach. Namely, we analyse two major recent events in the development of FD standard. The first event is the publication by the EU regulator of a first in the European legal practice regulatory proposal on the establishment of a common European FD standard for investors that would potentially include a requirement to consider ESG risks. This regulatory proposal is currently under development. The second event is the appearance of the first publicly known case of litigation on the matter of non-consideration by investors of ESG risks factors under their FD in the US. Through this dynamic approach based on the complex analysis of most recent and still ongoing movements in the FD legal frameworks we adopt an informed view on the FD law constraints in the face of new uncharacteristic for the financial world ESG risks.

As a result, this allows us to formulate two particular problematics related to ESG consideration by investors in their decision-making under the FD rule, which were not directly treated before in the analysis of the FD standard. Namely, we raise the question of the extent, to which ESG risks could be

accepted within the FD legal framework given their uncharacteristic nature for the traditional risk management. We also explore the extent to which these risks could and should be effectively managed by investors to avoid the risk of liability. Through our complex analysis we conclude that these two questions cannot clearly answered today by the elements of the FD legal framework alone. The further examination of these problematics only with the use of the legal analysis tools would not bring an immediate consensus on interpretations of what is possible under the FD standard in terms of ESG risks management. Consequently, we conclude our State of the Art with the statement of the need to resort to the use of the tools of the economic theory in order to be able to respond clearly to the identified problematics.

A clear response on the matter is of high importance in the light of the coming EU FD regulation and increasing risks of liability of investors facing ESG risks in their investment management. We note that given a certain lack in academic research on the matter, today, the majority of discussions on investors' FD and ESG risks management is conducted by market practitioners, who are directly exposed to a risk of being held liable under the FD law in case of risk mismanagement. With an uncertainty on whether they should or should not consider ESG risks in their decision-making, institutional investors seem puzzled and follow different strategies.

In 2018, CFA Institute[59], a global association of investment professionals, conducted a special CFA member survey[60] to analyse their viewpoints on formal integration of ESG risks into the investment decision-making. The results were quite mixed with 38% of respondents believing that it is not appropriate for regulators to legislate that ESG considerations be an integral part of the legal fiduciary duty owed to investment management clients, even if, in general, the majority of CFA members agreed that ESG integration into risk management and investment decision-making process is operationally possible.

[59] CFA stands for the Chartered Financial Analyst. The CFA institute offers CFA certification to investment professional, this certification being recognised internationally. The survey covered nearly 24 thousand EU-based members of the association.

[60] The survey can be consulted here: https://www.cfainstitute.org/-/media/documents/survey/esg-survey-2018.ashx

The problems related to ESG risks management as identified through the survey were: unusual non-financial nature of ESG risk factors, limited quality and quantity of ESG risks data and imperfect methodologies of ESG risk management that, nowadays, cannot guarantee a particular outcome of a risk management decision. Consequently, *despite significant progress, too many investors are not yet considering ESG* [risks] *in their investment research and decision-making*[61]. On the other hand, an increasing number of market practitioners support ESG risks consideration in the investment and risk management decision-making[62]. As a result, despite some difficulties, ESG risks are rapidly making their way into financial operations and more generally into the financial regulation applied to investors, with their consideration in the FD standard becoming unavoidable but still quite vague.

In this research, in order to be able to consider the fiduciary obligations more in detail, we will concentrate on one particular type of institutional investors – pension schemes, which represent a universal type of investor exposed to all potential types of investment-related risks including ESG risk factors due to their complex and long-term investment activities[63]. We will particularly examine fiduciary duties of pension plans in the European and American legal frameworks in the context of the recent developments in these two frameworks as stated above.

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[61] Article, *Complying with your Fiduciary Duty: A Global Roadmap for ESG Integration, Freshfields: 10 years on*, by UNEP FI, 2015

[62] *See* Article *Fiduciary duty is no obstacle to ESG integration, says LGIM*, Investment Europe, September 2018: https://www.investmenteurope.net/investmenteurope/opinion/3710729/fiduciary-duty-obstacle-esg-integration-lgim;

See also *Fiduciary Duty in the 21st Century*, Project by UN PRI (Principles for Responsible Investment). For some years already, UN PRI produces research on obstacles and opportunities of inclusion of ESG considerations into legal frameworks governing investor's decision-making in different countries. Their position is that ESG risk factors should be considered and many of the studied legal frameworks allow this. See more: https://www.unpri.org/fiduciary-duty/fiduciary-duty-in-the-21st-century/244.article

See also *ESG Investments a Good Option for Retirement Plans*, by Rebecca Moore, PLANSPONSOR, March 2019, available here https://www.plansponsor.com/esg-investments-good-option-retirement-plans/

[63] Pension funds are considered to be perfect long-term investors managing big masses of financial flows and, thus, play one of the central roles in any economy, and, by that, in the global development of sustainable investment. Their case represents a perfect example in order to study the integrity of ESG integration-related problematics.

Generally, the concept of FD takes its origins in the common law. Today, it is a part of trust law framework of the common law, which governs relationships where property is held and managed by one party for the benefit of another one (as it is in the case of a pension plan for the benefit of its members). These relationships engage liability of investors in case of property mismanagement through the system of tort law[64]. Within this framework investors are expected to behave in a particular way, i.e. to make rational and prudent investment choices (as a Prudent Investor) with respect to their beneficiaries' interests.

This is also the position adopted by the EU regulator in the ongoing regulatory developments on the creation of investors' fiduciary duty standard that would include requirements for ESG risks consideration. The EU proposal considers the fiduciary trust law experience in the common law system and follows in many ways the fundamental concepts of the FD trust regulation in the common law, even if the transposition of the FD standard in the national regulation of many European countries would potentially pass by contract law. The ongoing legislative process is based on the proposal by the European Commission[65] that suggests to amend the EU Directive 2016/2341 on the activities and supervision of institutions for occupational retirement provision (IORPs) in order to *include ESG factors in internal investment decisions and risk management processes, and to take into account the 'prudent person' rule with respect to ESG risks*[66]. We note that, as demanded by some market practitioners, the disclosure by investors of an impact of ESG risks factors in the real economy and not only on investments' returns could eventually be considered under the coming Disclosure regulation, which incorporates the EU FD regulation project[67]. However, the financial relevance of ESG risks still

[64] A tort, in common law jurisdictions, is a civil wrong that causes a claimant to suffer loss or harm resulting in legal liability for the person who commits the tortious act.

[65] *See* The proposal for a Regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341:

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018PC0354&from=EN

[66] See EU Parliament Briefing Paper on the matter available here: http://www.europarl.europa.eu/RegData/etudes/BRIE/2019/635572/EPRS_BRI(2019)635572_EN.pdf

[67] Where investors *claim to be pursuing an environmentally friendly strategy, information on how this strategy is implemented and the sustainability or climate impact of their products and portfolios* should

seems to be the first concern and the only element that could be considered in the coming EU FD standard[68].

When it comes to the US regulation of investor's prudent decision-making under the FD rule, the consideration of ESG risks could be allowed if it implies some important direct benefits in terms of investment returns, however, a trustee *must not too readily treat ESG factors as economically relevant to the particular investment choices at issues when making a decision*[69].

With such interpretation of ESG risk factors integration into investors' decision-making, a question arises on what exactly is expected to constitute under the FD standard an *economically relevant* ESG risk factor given the unconventional nature of ESG risks and difficulties in their measurement and management. Thus, in **Section 1** of this State of the Art we analyse the EU and US fiduciary duty legal frameworks in search of any elements of a possible answer to this particular question of *relevance* or *materiality* condition for ESG risks to be considered in investors' risk management and investment decision-making.

On the other hand, if any of ESG risk factors were material, a fiduciary would have to consider available methods and approaches to manage, to control these risks and to avoid negative outcomes. In today's context of sustainable risk and investment management, where ESG methodologies are still constantly under development and ESG risk control is complicated by the global long-term

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be disclosed […] this will *encourage investors to be more aware of the impact of their business on the environment*, See Article *EU sets out plan for investor sustainability disclosure rules* by Susanna Rust, IPE, March 2019

See also Article *EU agrees to sustainable investment disclosure framework* by Paulina Pielichata, Pensions & Investments, March 2019

See *also* European Commission Press release, *Capital Markets Union: Commission welcomes agreement on sustainable investment disclosure rules*, Brussels, March 2019

[68] *The extent to which sustainability risks are expected to have a relevant impact on the returns of the financial products* (EU Parliament Briefing Paper *Sustainable finance and disclosures Bringing clarity to investors*, 2019)

[69] US Field Assistance Bulletin 18-01, U.S. Department of Labor (DOL) considering the application of the Employee Retirement Income Security Act (ERISA) rules

and systemic nature of some ESG risks (e.g. climate change-related risks), investors are questioned on what could be done in terms of ESG risk management and inquire what they must do in the face of these risks to comply with FD standards and to avoid liability. The principle that a fiduciary (investor) is responsible for management of all risks identified as material implies that they would act on each of these risks; otherwise, their liability is at stake. However, not all outcomes of ESG risks management decisions would be anticipated and not all ESG risks management actions would be successful. In this context, the question is whether investors' fiduciary duties allow or restricts ESG risks management by investors.

Namely, one could argue that a final outcome of a management decision in case of very uncertain long-term risks (besides, executed within the traditional short-term risk management framework) could rather not be predictively assessed. In this context, a trustee would not always have enough information (and even conviction) to plausibly demonstrate the relevance of such management decision under the FD rule in relation to the associated costs. Davis (2009) states that for a defined benefit pension plan where an employer operating the plan assumes greater financial risks and liability for any shortfall in benefits as he is responsible for guaranteeing a certain level of benefits to the members of the plan, the *employer could legitimately object to the use of* [ESG risk] *criteria (…) on the grounds that this increased its risk of having to make additional* [expenses][70].

Besides, *it is not always straightforward to understand the effects of ESG risks and opportunities at the company level in such a way that these can be incorporated into typical financial models* and decision-making due to *a lack of*

[70] DAVIS R. B., *Democratizing Pension Funds: Corporate Governance and Accountability*, UBC Press, 2009, p.68: However, he accepts that this is not valid where *the costs of additional contributions will be passed on to the employees through lower future wages rises*.

See also RICHARDSON B.J., *Fiduciary Law and Responsible Investing: In nature's trust*, Routledge, 2013, p. 121: *But in a broader sense, the financial risk is also shared implicitly between the shareholders and employees (beneficiaries), both in the form of reduced future wage increases and an insolvency risk to the company.*

standardised data and risk metrics[71]. This position is shared by many private as well as public pension plans and some of their beneficiaries advocating against ESG integration into investment decision-making.

For instance, in October 2018, Priya Mathur, the head of the Board of the US largest public pension fund, the California Public Employees Retirement System (CalPERS)[72], was defeated in her bid for a fifth term on its Board of Administration. Jason Perez took her place with a high support of by a number of police and fire employee organizations. Mathur was one of the few to promote an active integration of sustainability preoccupations and ESG risk factors into pension funds management. However, on her watch CalPERS suffered some governance problems that, together with CalPERS weakened funding ratio and increased spending (operational costs) gave rise to critics of Mathur's position, including on ESG integration. Some journalists qualified her replacement by Perez to be a direct repudiation of ESG integration practices. Perez himself argued that *environmental, social, and governance investing priorities, regardless of the investment risk*, have put *retirement security at risk*, for California governmental retirees[73]. Jay Youngdahl in his article in ResponsibleInvestor.com qualified the Mathur defeat as a direct challenge to the current strategy and structure of responsible investment.

Data insufficiencies and methodological uncertainties related to ESG management make it difficult for institutional investors like pension funds to engage in ESG integration and sustainability risks hedging. This challenge is

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[71] *Investment governance and the integration of environmental, social and governance factors*, OECD publications, 2017, pp. 40-43: *As a result of these difficulties, ESG analysis usually takes the form of a qualitative input that is used alongside traditional quantitative models*. (…) *Institutional investors need to build up the expertise to manage the integration of ESG factors in their investment strategy, or to monitor external asset managers who run such strategies on their behalf*.

[72] We note that CalPERS is an agency in the California executive branch that manages pension and health benefits for more than a million of public employees, retirees, and their families.

[73] *See* more on this case in:

Article *Jason Perez to replace Priya Mathur on CalPERS board*, by R. Baert, Pensions&Investment, October 2018

Article *Op-Ed: CalPERS election earthquake should shake up responsible investment narrative*, by Jay Youngdahl, Responsible Investor.com, October 2018

Article *Is CalPERS' Jason Perez a turning point for ESG?*, by Daniel Brooksbank, Responsible Investor.com, October 2018

only greater when it comes to ESG risks of systemic nature assimilated to major financial crises, as this perspective complicates to a great extent a potential risk management decision by a particular fiduciary, particularly, in terms of expected success of his hedging measure. On the other hand, it appears unreasonable and imprudent to say that such uncertainties related to conceptual and methodological deficiencies of ESG integration strategies always justify doing nothing at all in the face of a potential risk[74].

In this context, in search of an answer to the question of whether all material ESG (or even financial) risks should systematically be managed or hedged by a fiduciary we analyse a particular domain of the FD litigation – stock drop claims (**Section 2**). For this purpose, we particularly focus on the very recent case in the US ERISA litigation practice implying Exxon Mobil Corporation. This case is particularly interesting due to its uniqueness; it is the first registered litigation case where current and ex-beneficiaries of a trust fund (pension fund) accused their trustees of a stock drop provoked by the lack of consideration and management of an ESG risk factor. This concrete and tangible example, Fentress v. Exxon Mobil Corp. (2016-2019), raises explicitly (among other questions) the issue related to the decision by an investor on a risk management action in the face of an ESG risk and the qualification of this action by the judge[75].

In this study, we do not aim to provide a global static overview of fiduciary duty requirements versus ESG risks consideration; this was perfectly done by M. M. Schanzenbach at R. Sitkoff (2018). On the contrary, we attempt to clarify, through a dynamic analysis of the latest legal developments and

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[74] On the importance and possibilities of sustainability risks mitigation, see:

UN Sustainable Development Goals: https://www.un.org/sustainabledevelopment/climate-change-2/

Doubling Down on Two-Degrees: The Rise in Support for Climate Risk Proposals, Harvard Law School Forum on Corporate Governance and Financial Regulation, January 2018:

https://corpgov.law.harvard.edu/2018/01/23/doubling-down-on-two-degrees-the-rise-in-support-for-climate-risk-proposals/

Carbon Risk for Financial Institutions: A Perspective on Stress-Testing and Related Risk Management Tools, Discussion Paper by 2Degrees Investing Initiative, October 2014

[75] The analysis of this particular legal question could then be used to inform the EU regulator on potential liability issues as regards ESG risks management.

evidence, some FD elements that are omnipresent in current ESG integration discussions, but which are still rarely studied. These are the concept of ESG risks materiality and the issue of a proper risk management action in the face of an ESG risk factor under the constraints of the FD law requirements applied to institutional investors. Consequently, the present State of the Art will continue further in the form of a complex analysis of the most recent legal developments in the US and the EU fiduciary duty law. As it will be shown further, this analysis will allow us to formulate two new questions that have not been examined in the current ESG FD literature and which are fundamental for a definition of investors' fiduciary duties and their legal liability in the face of ESG risks.

1. FIDUCIARY DUTY AND MATERIALITY OF SUSTAINABILITY RISKS – NEED FOR DEFINITION

Depending on the form and the scope of a national regulation, the FD standard of behaviour imposes different prescriptive obligations upon a trustee (a fiduciary): the duty of prudence (or care), the duty of loyalty, the duty of impartiality as well as such specific subsidiary obligations as transparency, accounting and recordkeeping[76], etc. Some of these duties, if not explicitly required by fiduciary legal rules or standards, can be omitted, but all fiduciaries must respect the core obligations of the duty of loyalty – to act in good faith and in the best interests of beneficiaries informing them of any relevant material facts. In case when the FD is applied to institutional investors and investment managers in the relation to their beneficiaries, the best interests of the latter are commonly accepted to be reflected in the obligation for fiduciaries to secure investments and to *ensure adequate and proportionate performance*[77]. This

[76] They can be understood and are presented by some authors as elements of the duty of prudence (care) For more details see SCHANZENBACH M. M., SITKOFF R. H., *The Law and Economics of Environmental, Social, and Governance Investing by a Fiduciary*, Discussion Paper No. 971, Harvard Law School, Cambridge, 2019, 58 p.

[77] European Comission Directorate General for Financial Stability, Financial Services and Capital Markets Union, Consultation Document *Institutional Investors and asset managers' duties regarding sustainability*, 2017, p.2.

obligation is administered by another core investor's duty – the duty of prudence. Together, the duties of prudence and loyalty form the basis of a sound decision-making by an investor in the consideration of all available information on investment-related risks and opportunities. Otherwise saying, fiduciary duties inform an investor on what behaviour is expected of him as a manager of financial property within the relation of trust vis-à-vis the fund's final investors. As it was stated before, in our particular case we will analyse this relation using an example of pension funds and their beneficiaries.

Fiduciary obligation in the investment world, especially in Anglo-Saxon legal frameworks[78], has always been acting as an investor-specific substantive law that would define rules of conducts for investors and their professional rights and responsibilities. Thus, one of the main texts of the US pensions regulation – Employee Retirement Income Security Act (ERISA, 1974) – states that anyone who exercises *any discretionary authority* or control over a pension plan's assets is a fiduciary[79]. In the European legal practice despite the absence of a common EU FD rule and differences of qualifications and interpretations of fiduciary duties in different national jurisdictions, the key responsibility of investors as fiduciaries vis-à-vis their beneficiaries is to manage funds prudently and in the interests of the latter. Following the practices in the US law and the common law more generally, the EU framework integrates the stated duties of prudence and loyalty.

We note that these core fiduciary duties (loyalty and prudence) are sometimes interpreted as an obligation of profit maximisation[80]. Under this perspective, many institutional investors consider that consideration of sustainability risks in investment and risk management decision-making is incompatible with their fiduciary duties[81] and, moreover, could negatively affect

[78] This is true across all common law jurisdictions (see UNEP FI 2005).

[79] (29 USC I (A) Paragraph 1002 (21) (A).)

[80] *See* DIAZ-RAINEY I. et al., *Institutional Investment in the EU ETS*, Working Paper 156, Tyndall Centre for Climate Change Research, December 2012, 41 p.: *The report argues that profit maximisation was never an integral part of trustees' fiduciary duties. This assumption stems from an incorrect reading of the 1984 Cowan v. Scargill court case in the UK as requiring trustees to "yield the best return for beneficiaries"* (Freshfields report 2005).

[81] *See* Kiernan 2007; Renneboog et al. 2008; Juravle and Lewis 2008; Martin 2009; Richardson 2011

their financial returns (due to associated costs). This view, despite being completely unproven[82], still raises a very important question of relevance or *materiality* of ESG risk factors for investors' decision-making and, consequently their compatibility with rules of investment behaviour established by fiduciary duties of loyalty and prudence.

To answer this question**,** United Nations Environment Programme – Finance Initiative (UNEP FI) commissioned a report on the subject of a potential conflict between investors' fiduciary duties and responsible investment practices. The UNEP FI Freshfields Report "*A Legal Framework for the Integration of ESG Issues into Institutional Investment* (Freshfields Bruckhaus Deringer 2005) concluded clearly that *integrating ESG considerations into an investment analysis so as to more reliably predict financial performance is clearly permissible and is arguably required in all jurisdictions*. Such vague conceptualisation of ESG risks integration into investment decision-making and of their role in this process gave rise to multiple interpretations of the importance of sustainability risk factors in finance ranging from total conviction about the need to consider ESG risks (in rare cases) to the general disregard of the matter. As a result, today, it is largely acknowledged *that additional legislation with regard to SRI investment would assist trustees and encourage those who are currently reluctant to move within the current framework*[83]. Without a clear regulatory view on this matter, the problematics seems to remain unsolved.

The objective of this research thesis is to finally clarify on what is allowed under the modern interpretation of investors' fiduciary duties in respect to ESG risks consideration in investors' decision-making. With the recent legal developments, namely the European Commission regulatory proposal on the obligation for investors to consider material ESG risks, we will analyse the relevant elements of FD law to establish whether they propose clear incentives

[82] HOEPNER A. G. F. et al., Islamic mutual funds' financial performance and international investment style: evidence from 20 countries, *The European Journal of Finance*, Vol. 17, 2011, pp 829-850.

[83] *See* DIAZ-RAINEY I. et al., *Institutional Investment in the EU ETS*, Working Paper 156, Tyndall Centre for Climate Change Research, December 2012, 41 p.

Richardson (2009) advocates legal sanctions on financial institutions not meeting restrictive investment criteria or looking at social costs as a means of promoting SRI.

and definitions for investors to be properly perform their fiduciary duties. The analysis will be conducted in the domain of the current European and American trust fiduciary law as applied to institutional investors, namely, pension schemes. We will demonstrate in this Section that given the unconventional nature and particularities of ESG risks as well as in the context of the current absence of a concrete legal conceptualisation of *materiality* definition for ESG risk factors in the texts of law, investors are facing difficulties in considering ESG information in their investment risk management decision-making. However, through this analysis of the current legal ESG FD regulatory propositions and of the general FD law, we find some elements that would allow a design of a clear and concrete definition of materiality for ESG risk factors that we will perform in **Chapter II** of this research thesis.

1.1. Investor's Fiduciary Duty to Manage Material ESG Risks

First of all, in the absence of an official and concrete legal interpretation of the materiality concept for ESG risk factors under the FD law, it is important to study the proximate legal texts on the subject of what elements indicating a potential for ESG risks to be considered by investors are available. We note that some legal texts in the US and the EU financial regulation contain an explicit mention of *materiality*. However, these texts do not provide statements defining this concept and, in general, they do not relate directly to investors' risk management under the FD rule. This shows that the legal texts still do not provide necessary guidance on what ESG risks could be considered as material and the need for ESG risks materiality definition is well present; however, the financial regulation indirectly offers some references that could guide the design of the materiality definition (that we consider in **Chapter II** of this thesis).

Thus, while analysing the EU and US financial regulation, we rapidly find that materiality could be understood as a level of value of an information item that makes it obligatory to be checked, disclosed and, consequently, taken into consideration in the decision-making process by the user of this information. This representation of significance or materiality is formulated in

the context of the auditing practice (introduced throughout international and national auditing standards and regulation). And, today, we notice that it has been migrating progressively during the last years into the financial securities regulation.

For example, the US Securities and Exchange Commission (SEC) specifies in the Generally Accepted Accounting principles (SEC GAAP) that an information item is significant or material if in case of its *omission or misstatement in a financial report, in the light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgment of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of the item*[84]. No wonder, that in its judgement on the materiality in the context of financial markets regulation the US Supreme Court (having relied on this general auditing interpretation of materiality) has held that a fact is material if there is *a substantial likelihood that the (. . .) fact would have been viewed by the reasonable investor as having significantly altered the "total mix" of information made available*[85]. In Europe, the regulator[86] in the auditing sector chose to rely on the definition proposed by the International Financial Reporting Standards (IFRS) developed by the International Accounting Standards Board (IASB) and the International Auditing and Assurance Standards Board (IAASB). By the way, IASB standards and definitions are largely influenced by the US legal and economic auditing practices. As a result, the European Securities and Markets Authority (ESMA) recognises the IASB definition that states that an information item is material *if it could reasonably be expected to influence the economic decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific*

[84] FASB, Statement of Financial Accounting Concepts No. 2, Qualitative Characteristics of Accounting Information ("Concepts Statement No. 2"), 132 (1980). See also Concepts Statement No. 2, Glossary of Terms - Materiality

[85] Affair TSC Industries v. Northway, Inc., 426 U.S. 438, 449 (1976). See also Basic, Inc. v. Levinson, 485 U.S. 224 (1988). As the Supreme Court has noted, determinations of materiality require "delicate assessments of the inferences a 'reasonable shareholder' would draw from a given set of facts and the significance of those inferences to him . . . ." TSC Industries, 426 U.S. at 450.

[86] The European Securities and Markets Authority (ESMA)

reporting entity[87]. However, the results of the consultation of financial industry professionals by ESMA published in February 2013[88] revealed that, even if ESMA outlined the provisions of IFRS in respect to the application of the concept of materiality, *many respondents expressed the view that there is diversity in application* [of the concept of materiality]. [Besides, in] *the user representative category (…) two thirds of those responding* [expressed] *the view that the materiality concept was not clearly and consistently understood.*[89]

Despite the difficulties in definition formulation and qualification of various information as material, in auditing, immaterial information is officially not a subject of auditing controls allowing errors viewed as potentially unsubstantial. This is due to the fact that despite high uncertainties in conceptions, definitions and processes, it seems still efficient to limit the control to the '*big fish'* data only. Rose et al. (1970) state that *not all financial information needs to be disclosed, nor need even all errors be corrected*. This statement is backed (depending on the author) by two theoretical concepts: efficiency (cost-benefit analysis) and 'attention' scarcity (information theory). Namely, Turner (1997), Waters and Tiller (1997), Fang and Jacobs (2000), Sauer (2007), Park (2009) and many others argued in their analyses of materiality that a high vigilance in controlling for small errors will increase information verification costs bringing only doubtful benefits[90]. Others, based on the thesis of Herbert A. Simon, a Nobel Prize laureate in 1978[91], consider that an efficient verification of the total amount of information is simply impossible, as the total quantity of information is unmanageable for an

[87] IASB, IFRS® Standards, Project Summary and Feedback Statement, Definition of Material, Amendments to IAS 1 and IAS 8. The document is available here: https://www.ifrs.org/-/media/project/definition-of-materiality/definition-of-material-feedback-statement.pdf?la=en

[88] ESMA Consultation Paper Considerations of materiality in financial reporting, available here: https://www.esma.europa.eu/sites/default/files/library/2015/11/2011_373_.pdf

[89] ESMA Feedback Statement Considerations of materiality in financial reporting, available here: https://www.esma.europa.eu/sites/default/files/library/2015/11/2013-218.pdf

[90] TURNER, J. L., The impact of materiality decisions on financial ratios: A computer simulation, *Journal of Accounting, Auditing & Finance*, Vol. 12, 1997, pp 125-147: "*Designers of accounting systems must take into account the cost-benefit relationship of having error-trapping at some given level. As a result, virtually all accounting systems have some degree of inherent tolerance for errors that management has determined to be acceptable*."

[91] *See* Herbert A. Simon (1971)

information user whose attention is a limited resource used in a complex investment-decision environment and within certain time constraints. This theory gave rise to such concept as *bounded rationality* of economic agents as well as such research direction as information theory.[92] And, coming back to our subject of analysis, from the investor perspective: *too much information may be cumbersome for investors, but material information allows investors to value securities' prices and risks.*[93] Nevertheless, the need for a complete understanding of the materiality issue and concrete definitions are of high importance today when the concept of *materiality* extends its applicability towards new information types like ESG risk factors and new legal and economic areas of application such as financial securities regulation and investors duties. Today, the term *materiality* becomes fundamental for production of financial information and its usage in decision-making by investors and, thus, appears with an increasing frequency in financial securities regulation texts governing the activities of professional investors. However, these texts still do not open up on a clear definition of this concept.

The Article 16(1) of the EU prospectus Regulation (EU) 2017/1129 related to the risk factors consideration by financial professionals states openly that: *the risk factors featured in a prospectus shall be limited to risks (…) which are material for taking an informed investment decision, as corroborated by the content of the registration document and the securities note.* As a result, investors should *assess the materiality of the risk factors based on the probability of their occurrence and the expected magnitude of their negative impact*[94]. For now, this is almost the only case of usage of the materiality concept in the securities regulation, which despite offering a basic principle of materiality assessment still does not provide investors with valid tools and

[92] *See* H. Gin Chong, Gerald Vinten (1994): In this case, "*too much auditing may not only cause undue distress to both auditors and their clients, but also having too many details disclosed in financial statements may distract users from focusing attention on crucial information in decision-making*".

[93] *See* Charlotte W. Rhodes (2015)

[94] Regulation (EU)2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC. Also see ESMA Consultation Paper, Guidelines on risk factors under the Prospectus Regulation, available here: https://www.esma.europa.eu/sites/default/files/library/esma31-62-996_consultation_paper_on_guidelines_on_risk_factors.pdf

procedures for a regulatory compliance, leaving them to define materiality of risk factors by themselves without putting concretely it in the legal and operational context of investors risk management obligations, processes and their fiduciary duties. This text neither considers ESG risks, leaving this topic unresolved. In the US regulation governing securities industry we find numerous mentions of materiality or material facts generally applied in the field of accounting. For example, we find references to material facts and statements in the Securities Exchange Act of 1934, the Dodd-Frank Wall Street Reform, the Consumer Protection Act of 2010, the Trust Indenture Act of 1939 and the Investment Company Act of 1940, etc. However, no equivalent direct statement of materiality of risk factors exists in the US securities and financial risk-related regulation. Thus, the mentioned European legal text attempting to define materiality in the context of investment risk management applied to professional investors could be considered the first of the kind. The second case where the EU regulator resorted to the notion of materiality, and again without giving any proper definition of this concept, became the design of the EU Action Plan for Sustainable Finance and of the following legislative proposals on the consideration of ESG risk factors in the context of institutional investors' risk management and investment decision-making[95].

The option chosen by the EU regulator for the legal proposal on the definition of fiduciary duties of investment professionals with consideration of ESG risk factors (ESG FD) explicitly requires relevant entities: *to consider ESG risks as drivers of value in their investment process (…) as part of their fiduciary duties towards investors / beneficiaries. More specifically, the legal proposal would detail how and where* ***material*** *ESG risks are to be integrated within the procedures in the areas of investment strategy, risk management, asset allocation and governance, as they do for financial risks. (…) If, as a result of their assessment, they find out that ESG factors have no material impact on the financial performance, they will not take them into account in*

[95] European Commission, Brussels, 8.3.2018 COM(2018) 97 final, Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions, Action Plan: Financing Sustainable Growth. It is available here : https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN

their investment decisions / advisory recommendations[96]. Again, it is up to an investor to choose what ESG risk is material as no proper guidance on the matter is provided and no explanation of how such personal definitions of materiality would suit into the investors' FD obligations is given. In this context and considering multiple interpretations of ESG risks and of their significance by various investors today presented in the General Introduction (page 18), the EU proposition of such new ESG FD concept for investors' regulation seems to complicate the qualification of investors' FD and 'good behaviour'. As a result, the need for a clarification of what risk factor can legally be considered as material under the investors' FD rises. We note that, as for the US federal laws, which govern the activities of institutional investors, particularly, of pension plans, they stay silent on this matter.

We note that the FD of investors require the latter to engage a *reasonable* investment risk management decision-making process governed by the fiduciary duty of *reasonable care* (or *prudence*). In other words, it appears that if fiduciaries must consider material risk factors, they are to define their materiality based on an expected risk-related change in their economic decision under the constraints of their fiduciary obligations, including those related to the duty of care. In this context, two aspects should be made clear: (1) the characteristics of the decision-making process in compliance with the fiduciary duties of institutional investors, in our case pension funds analysis; (2) the materiality threshold in terms of the minimum expected magnitude of a risk's outcome susceptible to produce a change in an investor's decision. If the EU and the US legal corpus related to trust fiduciary obligations offers an extensive framework regulating decision-making by investors, and as particularly considered in our case by pension schemes, it does not do the same for the question of the materiality, which stays open. However, we consider that the FD

[96] European Commission, Brussels, 24.5.2018 SWD(2018) 264 final, Commission Staff Working Document Impact Assessment, Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on the establishment of a framework to facilitate sustainable investment and Proposal for a Regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 and Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2016/1011 on low carbon benchmarks and positive carbon impact benchmarks, p.39. The document is available here: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-5524115_en#pe-2018-3336

law itself provides some hints on the matter. To demonstrate that, let us consider the FD law in the EU and in the US.

In Europe, pension schemes' fiduciary duties are regulated more tacitly than explicitly. According to the representation of the European trust law by D.J. Hayton et al. (1999) proposed in their book the *Principles of European Trust Law*, the *fundamental duty of a trustee is to adhere to the terms of the trust, to take reasonable care of the trust assets and to act in the best interests of the beneficiaries*[97] *or, in the case of a trust for purposes, the furtherance of those purposes*. As applied to institutional investors (including pension funds), no specific European regulation states explicitly any fiduciary requirements[98]. Some elements of investors' fiduciary duties are however provided in the most extensive form in the Markets in Financial Instruments (MiFID) II Directive (Directive 2014/65/EU). Without precisely stating fiduciary duties, the MiFID II Directive in the Article 24 clearly requires professional investors to *act honestly, fairly and professionally in accordance with the best interests of their clients*[99]. However, the MiFID II Directive does not define the possibility to include ESG risks consideration into investment decision-making. On the contrary, ESG risks consideration is allowed and even required (if relevant) by the Institutions for Occupational Retirement Provision (IORPs) Directive, which governs activities of pension funds. Here, ESG factors integration clearly appears as part of the global

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[97] A trustee must first ascertain who are the beneficiaries, what are their rights in respect of income or capital, and what powers he has to further their interests (HAYTON D. J. et al., *Law of Trusts and Trustees*, 18th ed., Butterworths Law, 2010, Article 48).

[98] According to the EU regulator: *there is no official definition of fiduciary duty at EU level, neither a clear reference to this concept across legal texts*. See more information of EU regulation related to fiduciary duties of institutional investors in the European Commission Resource Efficiency and Fiduciary Duties of Investors Final Report ENV.F.1/ETU/2014/0002 DG Environment.

The report is available here: http://ec.europa.eu/environment/enveco/resource_efficiency/pdf/FiduciaryDuties.pdf

[99] *Most other EU legislations targeting the financial industry refer to fiduciary duty in a similar way* (European Commission Resource Efficiency and Fiduciary Duties of Investors Final Report ENV.F.1/ETU/2014/0002 DG Environment).

Namely, the Article 21 of AIFM Directive states that "... the AIFM [Alternative Investment Fund Manager] and the depositary shall act honestly, fairly, professionally, independently and in the interest of the AIF [Alternative Investment Funds] and the investors of the AIF." Also, the Article 25 of the UCITS Directive specifies that "In carrying out their respective functions, the investment company and the depositary shall act honestly, fairly, professionally, independently and solely in the interest of the investors of the UCITS."

pension schemes' risk management process[100], which, as part of investors' decision-making framework, should be executed *honestly, fairly and professionally*. Also, the newly coming EU proposal related to sustainable investment disclosure rules for investors offers some additional specifications on the fiduciary obligations of institutional investors including pension schemes[101]. This text has passed through several public consultations and is based on the feedback of the financial industry professionals also expressing *the need to define institutional investors' and asset managers' duties regarding sustainability, which could be extended to embed wider environmental, social and governance considerations.* The market states that fiduciary *duty should also include the notion of sustainability.* And the vast majority of interviewed entities confirmed the need to clarify at the EU level whether institutional investors' and asset managers' duties involve assessing ESG-related risks and taking them into account if they are relevant[102].

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[100] ORPs should, as part of their risk management system, produce a risk assessment for their activities relating to pensions. That risk assessment should also be made available to the competent authorities and should, where relevant, include, inter alia, risks related to climate change, use of resources, the environment, social risks, and risks related to the depreciation of assets due to regulatory change ('stranded assets'). (Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs), Paragraph 57).

Idem Article 28: 2. Member States shall ensure that the risk assessment (…) includes the following: (h) where environmental, social and governance factors are considered in investment decisions, an assessment of new or emerging risks, including risks related to climate change, use of resources and the environment, social risks and risks related to the depreciation of assets due to regulatory change.

Also, the Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017, amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement states that *Transparency of asset managers disclosure shall include reporting on the key material medium to long-term risks associated with the investments*…(…)…*that disclosure should cover reporting on the key material medium to long-term risks associated with the portfolio investments, including corporate governance matters and other medium to long-term risks.*

[101] The coming regulation is supposed to cover (i) investment funds; (ii) insurance based investment products (life insurance products with investment components available as individual retail life policies as well as group life policies); **(iii) private and occupational pensions**; (iv) individual portfolio management; and (v) both insurance and investment advice. (European Commission, Press release, Capital Markets Union: Commission welcomes agreement on sustainable investment disclosure rules, Brussels, 7 March 2019).

[102] European Commission, Proposal for aa Regulation of the European Parliament and of the Council on disclosure relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 [IORPs Directive], Brussels, 24 May 2018, pp. 7-8.

As a result, the EU Proposal and the associated legislative acts *aim to integrate ESG considerations into the investment and advisory process in a consistent manner across sectors*. More precisely, Article 10 of the Proposal states particular amendments to Directive (EU) 2016/2341 (also called IORPs Directive) mentioned before, namely: (1) In Article 19, the following paragraph 9 is added:

> *'9. The Commission is empowered to adopt, by means of delegated acts*[103] *in accordance with Article 60a, measures ensuring that: (a) The 'prudent person' rule with respect to the consideration of environmental, social and governance risks is taken into account; (b) Environmental, social and governance factors in internal investment decisions and risk management processes are included.*

Those delegated acts shall take into account the size, nature, scale and complexity of the activities of the IORPs and of the risks inherent to these activities and ensure consistency with Article 14 of Directive 2009/65/EC, Article 132 of Directive 2009/138/EC and Article 12 of Directive 2011/61/EU.'[104]

Obviously, given a very long history and the global origin of fiduciary standards in common law, it is logical that the rudiments of the European trust fiduciary law are grounded on the common law trust regulation and practices[105].

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[103] In the European Law, delegated act represent tools of secondary legislation. Once an EU law is passed, it can be necessary to update it to reflect developments in a particular sector or to ensure that it is implemented properly. Parliament and Council can authorise the Commission to adopt delegated or implementing acts, respectively, in order to do this. The Commission adopts delegated acts on the basis of a delegation granted in the text of an EU law, in this case a legislative act. The Commission's power to adopt delegated acts is subject to strict limits: (1) the delegated act cannot change the essential elements of the law; (2) the legislative act must define the objectives, content, scope and duration of the delegation of power; (3) Parliament and Council may revoke the delegation or express objections to the delegated act.

[104] European Commission, Proposal for aa Regulation of the European Parliament and of the Council on disclosure relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 [IORPs Directive], Brussels, 24 May 2018, pp. 25-26

To follow the evolution of the legislation process concerning EU proposals related to sustainable finance visit: http://www.europarl.europa.eu/legislative-train/theme-deeper-and-fairer-internal-market-with-a-strengthened-industrial-base-financial-services/file-sustainable-finance-disclosures-relating-to-investments-and-risks

[105] We note that if Trust law was born in the UK law, namely in its Equity branch (see more on this here: https://en.wikipedia.org/wiki/Equity_(law)), today, the dominant trust fiduciary regulation is the American one due to its clarity and "efficiency".

However, with the direct introduction, through the coming EU sustainable finance regulation, of the fiduciary standard of *prudent person* (first briefly considered in the EU IORPs Directive in 2016)[106], the common law interpretation of fiduciary duties enters undeniably the *juvenile* EU fiduciary law. As a result, we can generally conclude that the EU law follows the US interpretation of FD by stating that a decision-making process by a fiduciary should be executed *honestly, fairly and professionally* as a *prudent person* would do. And, naturally, we find here an overlap with the core principles of common law fiduciary duties: the principles of prudence (care) and loyalty.

Particularly, the Common law of trusts in the US is founded on the standard of prudence (or care), which is, in the context of financial regulation, the *prudent investor standard* codified in the Uniform Prudent Investor Act. 1995[107]. The Act provides that:

> *(a)A trustee shall invest and manage trusts assets as a prudent investor would (…). In satisfying this standard, the trustee shall exercise reasonable care, skill and caution.*

In total, 44 states and the District of Columbia adopted versions of the Uniform Prudent Investor Act. Additional five states adopted their own modified versions[108]. But, when it comes to the American trust fiduciary regulation applied to pension funds, the minimum standards of investment management are established by the Employee Retirement Income Security Act of 1974 (ERISA) which covers employee benefit plans sponsored by private companies, such as pension and 401(k)-type retirement plans. In terms of its application in the context of pension plans management, ERISA covers three types of fiduciaries defining them in functional terms of control and authority

[106] However, neither of these texts developed on what is concerned as a 'prudent' decision. No definition of Prudent Investor Standard is given, letting believe that it is similar to what is defined as a prudency standard in common law, particularly US ERISA Act.

[107] Until the mid-1990s, the common law standard of care for trustees in the making of trust investments was the 'prudent man' or 'prudent person standard' reflected in the Model Prudent Man Investment Act and the restatement Second of Trusts. (See Harvard Coll v. Amory, 26 Mass 446, 469 (1830).

[108] *Each of these prudent investor acts is a default rule that can be altered by the terms of the trust agreement itself*. (SPANGLER T., *Investment Management Law and Practice*, Oxford University Press, 2010, pp. 48-55)

over the plan: (i) those who exercise authority over the management or disposition of plan assets; (ii) providers of investment advice for a fee with respect to pension plan assets; (iii) administrators of a plan[109]. ERISA *requires fiduciaries to discharge their duties with respect to a plan 'with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like character and with like aims'*[110]. *Given that the retirement funds of many Americans are in the hands of ERISA fiduciaries, the fiduciary standard of care under ERISA is said by some courts to be 'the highest known to the law'*[111]. It is important to mention that in the US Federal law, no particular text on trust fiduciary legal obligations of pension funds, and, more largely, institutional investors include ESG or other sustainability-relevant provisions or mentions.

Following the analysis and these observations of the EU and the US legal frameworks, it is possible to conclude that a kind of *harmonisation*[112] process in happening today between fiduciary duties requirements provided by the common law and the newly born European trust fiduciary law. Based on this, it seems possible to state that under both legislations the appreciation of the materiality of ESG risk factors (also, of financial risks) should be performed by a fiduciary (pension fund) in the same way, i.e. within the constraints of the general *prudent* decision-making framework (*duty of care*) and with attention to beneficiaries interests (*duty of loyalty*)[113]. As so, and in the absence of a

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[109] Pub. L. No. 93-406. Also, MATTA R.K., ERISA for securities professionals, *Journal of Investment Compliance*, Vol.5, 2004, 69-83.

See also RICHARDSON B. J., *Fiduciary Law and Responsible Investing: In Nature's trust*, Routledge, 1st ed., 2013, p.112 (352 p.)

[110] 29 USC paragraph 1104 (a) (1) (B) (2006).

The 'prudent man' standard of care is owed to the plan and its participants and beneficiaries. 29 USC paragraph 1104 (a) (1) 2006.

See also SPANGLER T., *Investment Management Law and Practice*, Oxford University Press, 2010, 1500 p.

[111] Donovan v Bierwirth, 680 F 2nd 263, 272 n 8 (2d Cir 1982)

[112] *Some legal harmonisation of fiduciary standards stems from pressures to forge compatible legal standards to facilitate cross-border financial markets* (RICHARDSON B. J., *Fiduciary Law and Responsible Investing: In Nature's trust*, Routledge, 1st ed., 2013, p. 144 (352 p.))

[113] ESG implementation has to be performed in a prudent manner within the prudent investor principle with particular attention to beneficiaries' interests.

concrete definition of materiality, the duties of prudence (care) and loyalty provide specific borders, or limits, to investors' decision-making, within which the materiality could potentially be defined. However, a question rises whether these limits would be enough to formulate a clear and strict definition of materiality and a concrete framework of definition of its quantitative materiality threshold. Another question is whether such threshold could be applicable to extra-financial sustainability risk factors, given their specificities. Here, the general lack of data on ESG risks, insufficient quality of the available information, unstable valuation and management methodologies together with a particular nature of some ESG risk factors (systemic and uncertain character as well as long-term occurrence) complicate the correct assessment of ESG risks materiality.

Thus, despite some hints and references on what ESG risks can be identified as material provided by the EU and US regulation (including the auditing regulation); we argue that there is a need for a clear definition of materiality within clear constraints of the FD standard. This need is particularly strong in the view of the coming EU ESG fiduciary duties regulation, as institutional investors are in search of guidance on what factors they should consider in their decision-making process.

1.2. Special Case of Long-Term ESG Risks

Speaking about the specificities of some ESG risk factors, for instance like climate change-related risks, which have a systemic and long-term character, we could argue that within the current interpretations of the fiduciary law these aspects of ESG risks are largely neglected. This is due, among others, to the lack of flexibility of currently applied general risk and investment management theories and methods and, as a result, of the concomitant legal fiduciary frameworks favouring such constraints[114]. Even if at some point the

[114] James Hawley et al. (2011) notify that the fiduciary duty implies the Modern Portfolio Theory application in investment management. He restates the following quotations on this matter:

Also, *Non adoption of ESG can be explained by 'a narrow interpretation of fiduciary duty that excludes reference to anything other than the risk-adjusted rate of return,*' (CLARK G.L., KNIGHT E.,

FD framework might be interpreted as allowing a consideration of systemic risks, its postulates still completely overlook long-termism[115]. For instance, Richardson (2013) advocates for an active consideration of systemic risks in investors' decision-making advancing that *broad exposure to the market requires more active and systemic investment policies*[116]. At the same time, James Hawley et al. bewail '*a strong cognitive resistance' to understanding the dynamic context to fiduciary law that must address the systemic risks associated with financial markets*[117].

In the *Rise of Fiduciary Capitalism*, James Hawley and Andrew Williams defend the hypothesis that institutional investors who invest widely across the market will only benefit by considering the ESG externalities in their portfolios[118] as this will allow to 'manage' systemic risks. This approach gives rise to the so-called *universal owners* definition and the general concept of *universal ownership*, meaning that as global investors, institutional investors should *have no interest in abetting behaviour by any one company that yields a short-term boost while threatening harm to the economic system as a whole*[119].

Implications of the UK Companies Act 2006 for institutional investors and the market for corporate social responsibility, *University of Pennsylvania Journal of Business law*, Vol. 11, 2009, pp 256-296.)

The focus on diversifiable (often asset-specific risks) 'left unexamined…the impact of systemic risk…seen as strictly exogenous'. (HAWLEY J., et al., Reclaiming fiduciary duty balance, *Rotman International Journal of Pension Management*, Vol. 4, 2011, pp 4-16)

See also General Introduction for more details on the interaction of trust fiduciary law and neoclassical economic and financial approach.

[115] "This makes it difficult to move to financial business case for investment in carbon market instruments unless the social costs for the long term are priced in. The latter will invariably require legislative changes (Richardson 2009; Sandberg 2011). *See* also DIAZ-RAINEY I. et al., *Institutional investment in the EU ETS*, Working Paper 156, 2012, pp 135-136 (41 p.).

[116] RICHARDSON B. J., *Fiduciary Law and Responsible Investing: in nature's trust*, Routledge, 1st ed., 2015, p. 163 (352 p.)

[117] HAWLEY J., JOHNSON K., WAIZTER E., Reclaiming Fiduciary Duty Balance, *Rotman International Journal of Pension Management*, Vol. 4, 2011, pp 4-17.

See also RICHARDSON B. J., *Fiduciary Law and Responsible Investing: in nature's trust*, Routledge, 1st ed., 2015, 352 p.

[118] HAWLEY J. P., WILLIAMS A. T., *The rise of Fiduciary Capitalism: How institutional Investors Can Make Corporate America More Democratic*, University of Pennsylvania Press, 2000, 256 p.

[119] DAVIS S., LUKOMNIK J., PITT-WATSON D., *The New Capitalists: How Citizen Investors are Reshaping the Corporate Agenda*, Harvard Business Review Press, 1st ed., 2006, p. 18 (288 p.)

The consideration of systemic risks in investment decision-making under trust fiduciary obligations, if not obvious, is at the same time widely discussed and even accepted by a number of investment professionals and academics. K. L. Johnson and F. J. de Graaf propose among some general recommendations for the modernization of the US fiduciary standards for pension fund to *confirm the importance of systemic and extra-financial risks (e.g. items not reflected on the financial statements) that could affect the short- or long-term well-being of participants/beneficiaries*[120]. This trend is less pronounced when it comes to consideration of a long-term aspect of sustainability risks even if in many cases ESG risk factors could be qualified as both systematic and long-term (for example, climate-related risks). The rise of sustainable investment revealed fiduciary law, risk management and investment practices unprepared and even maladjusted in the face of this new challenge – *long-termism*.

It is in this context, as well as in the light of the coming European regulation on sustainable finance, and, as a result, of the importance of identification and qualification of ESG risks under EU fiduciary law, that we inquire of what the term of *materiality* means in case of long-term ESG risks. Surprisingly, some elements of the answer to this question come directly from the fiduciary law itself. It is possible to say, that since the adoption of the Paris Agreement[121] in 2015, Europe entered into the new era of sustainable finance regulation, starting to introduce progressively long-term aspects of economic

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This approach advances that any externality of an individual company may be internalised by an investor on the portfolio level and, as result in some costs. For instance, the price of environmental damage worldwide in 2008 was USD 6.6 trillion, such costs are expected to rise to USD 28.6 trillion by 2050, which is 18% of projected global GDP. (*See* Report by UNEP-FI and the UNPRI Secretariat, *Universal Ownership: Why Externalities matter to Institutional Investors*, PRI Association and UNEP FI, 2011.)

[120] JOHNSON K. L., DE GRAAF F. J., Modernizing Pension Fund Legal Standards for the Twenty-First Century, *Rotman International Journal of Pension Management*, Vol. 2, 2009, pp 48-49 (9 p.)

See also YOUNGDAHL J., The Time Has Come for a Sustainable Theory of Fiduciary Duty in Investment, *Hofstra Labor and Employment Law Journal*, Vol.29, 2011, pp 134-139 (27 p.)

[121] At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C.

The Paris Climate Agreement (COP21) as ratified by the Union on 5 October 2016 and entered into force on 4 November 2016, seeks to strengthen the response to climate change, among other means, by making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

and financial decision-making into the European legal frameworks. Namely, the Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017, amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement states that:

…transparency of asset managers disclosure shall include reporting on the ***key material medium to long-term risks associated with the investments****…that disclosure should cover reporting on the key material medium to long-term risks associated with the portfolio investments, including corporate governance matters and other medium to long-term risks.*

Also, the Proposal for a EU regulation on investors' disclosure related to their sustainable investments and associated sustainability risks, which introduces (among other measures) a provision related to the integration of ESG risk factors into investors' decision-making framework in respect with their fiduciary duties, provides that sustainability risks *would be more systematically taken into account in financial modelling, leading to an optimal risk-return trade-off at least in the long-term, thereby fostering market efficiency*. Furthermore, when it comes to the fiduciary obligations of institutional investors, namely pension funds, the EU IORPs Directive states in its Article 19 that *Member States shall require IORPs registered or authorised in their territories to invest in accordance with the* ***'prudent person' rule*** *and in particular in accordance with the following rules:*

> *(a)the assets shall be invested in* ***the best long-term interests of members and beneficiaries as a whole****;*
>
> *(b)within the prudent person rule, Member States shall allow IORPs to take into account the potential long-term impact of investment decisions on environmental, social, and governance factors…*

Pension funds are considered by the European regulator to play an important role in the long-term financing of the Union's economy and in the provision of secure retirement benefits[122]. By setting the fiduciary duty rule as the underlying principle for capital investment by pension schemes, the

[122] Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs)

regulator aims to guarantee that this role is played prudently and in accordance with the best long-term interests of beneficiaries[123]. Based on these observations, we conclude that the definition of the decision-making framework that might determine the materiality of long-term ESG risk factors is conditioned by both the prudent investor standard and the duty related to the respect of interests of beneficiaries – the duty of loyalty.

Quite expectedly, the same relation between long-termism and the duty of loyalty is found in the US legal corpus. In the same perspective, US ERISA considers explicitly the *long-term retirement security of participants and beneficiaries.* Also, Section 404 of ERISA requires trustee to *act solely in the interests of the participants and beneficiaries* of the plan. Despite the absence of any mention of ESG or sustainable investment practices in the Act, the stated duty of loyalty offers some basis for considering long-term risks in pension schemes' risk management and investment decision-making process, particularly in the context of intergenerational interests and equity. *Duty of loyalty is the most important duty that fiduciaries owe to their principals*[124]. On the grounds of this duty, more precisely, its concomitant duty of impartiality[125], fiduciaries must not only act in the sole interests of beneficiaries, but they must treat them even-handedly. *A derivative of the duty of loyalty, the duty of impartiality obliges fiduciaries to identify and impartially consider the conflicting interests of different beneficiary groups*[126]. The

[123] Short termism in investment outlook is contrary to the long-term duties trustees have to beneficiaries, as the core duty of benefit funds involves the provision of benefits over the long term (YOUNGDAHL J., The basis of FD in investment in the US, *Cambridge Handbook of Institutional Investment and Fiduciary Duty* ed. by James P. HAWLEY et al., Cambridge University Press, 2014, pp 20-29.)

[124] SPANGLER T., *Investment Management: Law and Practice*, Oxford University Press, 1 ed., 2010, p. 386 (1500 p.)

See also RICHARDSON B. J., *Fiduciary Law and Responsible Investing: in Nature's Trust*, Routledge, 1st ed., 2013, p. 117. (The EU's Occupational Pensions Directive provides that 'assets shall be invested in the best interests of the members and beneficiaries." The American ERISA uses a 'sole interests' standard (Section 404), and US courts have expressed this duty as one on 'undivided loyalty' (Meinhard v. Salmon, (1928) 164 NE 545 (NY).)

[125] A fiduciary may also learn more about the best interests of its beneficiaries while minimizing any specific disadvantage to the interests of some classes of beneficiaries, thereby enabling fulfilment of the concomitant duty of impartiality. (RICHARDSON B. J., *Fiduciary Law and Responsible Investing: in Nature's Trust*, Routledge, 1st ed., 2013, p. 119)

[126] RICHARDSON B. J., *Fiduciary Law and Responsible Investing: in Nature's Trust*, Routledge, 1st ed., 2013, pp 126-130.

impartiality standard implies that *conduct in administering a trust cannot be influenced by a trustee's personal favouritism…nor is it permissible for a trustee to ignore the interests of some beneficiaries merely as a result of oversight or neglect*[127]. The duty of impartiality imposes to fiduciaries an obligation to identify and balance in a diligent manner various beneficial interests. In this context, long-term sustainable investment approach might be considered in pension fund management by a fiduciary in an attempt to equally account for different interests of several classes of beneficiaries representing different generations. On this basis, trustees may justify the use of long-term sustainable investment strategies as a technique to answer the concerns of their future beneficiaries. Namely, this interpretation of the duty of impartiality is recognised by the American case law[128], which, thus, mandates fiduciaries to consider long-term outcomes of their investment decisions.

In Withers v. Teachers' Retirement System[129], the court concluded that a fiduciary (here, New York City) must aim to respect both its future and present financial obligations in the management of the pension fund:

The trustees…would have violated their fiduciary obligation had they exhausted the assets of an underfunded actuarially reserved pension system on a single class of beneficiaries (retirees). (…) Their obligation, plainly, was to manage the fund…for not only…current retirees, but also…those scheduled to retire in the future[130].

This interpretation was consolidated in 1996, when the United States Supreme Court, in Varity v. Howe, stated that *the common law of trusts* [made

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[127] ALI, op. cit., s. 79, comment b.

[128] *See* HAYTON D. J. et al., *Principles of European Trust Law,* Kluwer Law International, W.E.J. Tjeenk Willink, 1999, p. 54.

Because the duties of trustees are onerous and because they may get caught in the cross-fire between two sets of beneficiaries with competing interests, common law jurisdictions afford trustees the opportunity to apply to the court (at the expense of the trust fund) for advice or for approval in relation to matters where the trustees are uncertain as to their position. (*See* HAYTON D. J., *Law of Trusts and Trustees*, Butterworths Law, 15th ed,, 1995, Article 90, (1133 p.)). The trustees can then safely proceed in accordance with such advice or approval (so long as they put the court fully in the picture and did not mislead it).

[129] (1978) 447 F. Supp. 1248 (SDNY), affirmed; 595 F. 2d 1210.

[130] (1978) 447 F. Supp. 1248 (SDNY), affirmed; 595 F. 2d 1210. Ibid.,1257-8.

applicable to ERISA §§404, 409] *recognizes the need to preserve assets to satisfy future, as well as present, claims and requires a trustee to take impartial account of the interest of all beneficiaries*[131]. In their paper *Modernizing pension fund legal standards for the twenty-first century* (2009) the same Keith L. Johnson and Frank Jan de Graaf recommend that regulators transforming trust fiduciary requirements for investors e*mphasize the duty of impartiality and the need to balance short-term and long-term obligations*[132]. Here, the issue is not that a short-term outlook is wrong but, rather, that fiduciaries should demonstrate competence with respect to long-term value creation and risk management and consider the potential transfer of risks between generations of beneficiaries[133].

Today, we witness a rapidly growing trend in the application of sustainability approaches and in the consideration of long-term ESG risk factors by institutional investments, particularly pension schemes. Many authors are positive about this tendency[134]. *Responsible investment requires an orientation towards strategies that optimize long-term returns, both because this delivers better financial returns the time profile that interests intended beneficiaries, and because over these periods social and environmental issues become more*

[131] Same reasoning can be found in the following initiatives:

Restatement of Trusts, Third (1992), Comment (c) to §79(1). In the United Kingdom, the 1984 case of Cowan v. Scargill turned on impartiality. *See* also Withers v. Teachers' Retirement System (1978, 1257–58). The CFA Institute's Code of Conduct for Members of a Pension Scheme Governing Body advises that an effective trustee will "consider the different types of beneficiaries relevant to each pension scheme" and "engage in a delicate balancing act of taking sufficient risk to generate long-term returns high enough to support real benefit increases for active participants who will become future beneficiaries while avoiding a level of risk that jeopardizes the safety of the payments to existing pensioners" (*See* Schacht and Stokes 2008)

[132] *See* also YOUNGDAHL J., The Time Has Come for a Sustainable Theory of Fiduciary Duty, *Hofstra Labor and Employment Law Journal*, Vol. 29, pp 134-139.

[133] *See* HAWLEY J. P. et al., Reclaiming Fiduciary Duty Balance, *Rotman International Journal of Pension Management*, Vol. 4, 2011, p 14.

[134] *See* HEBB T., *No Small Change: Pension Funds and Corporate Engagement*, Cornell University Press, 2008, 1st ed., 168 p.; STAUB-BISANG M., *Sustainable Investing for Institutional Investors: Risks, Regulations and Strategies*, Wiley, 2012, 256 p.; ZARBAFI E. M., *Responsible Investment and the Claim of Corporate Change*, Gabler Verlag, 2011, 300 p.; RICHARDSON B. J., Fiduciary Law and Responsible Investing: in nature's trust, Routledge, 1st ed., 2015, 352 p.

material and so can be better considered[135]. However, we note that theoretical concepts for sustainable, long-term investing tend to diverge from the general perception of institutional investors' duties and market practices. Among reasons that could explain this phenomenon are deficiencies in financial models about the economic value of long-term; short-term oriented risk management frameworks or tendency of economic agents to heavily discount the future, etc.

As a result, investors may allow losses over the long term to the detriment of their fiduciary responsibility, without a proper long-term and ESG risks consideration and, particularly without a proper guidance on what risks are considered to be material and, thus, must be considered and managed under their fiduciary obligations. In this context, we argue that there exists a need for a clear definition of materiality of risks allowed under the modern interpretation of the fiduciary duties. It is important to trace the limits of this interpretation by clearly stating at what extend ESG risk factors suit into the definition of *material risks* with respect to the requirement of a prudent investment decision-making (duty of care) in the best interests of current and future beneficiaries (duty of loyalty).

Such definition would inform market practitioners and concerned regulators of potential obstacles on the way of the introduction of ESG risk considerations into fiduciary decision-making and would allow them to find the right measures in case when concerns related to ESG risks should be 'promoted' further within investment sector with the use of fiduciary law instruments. We attempt to provide some basis of this definition in **Chapter II**.

However, we must admit that there is another issue that rises once material ESG risk factors would be identified and defined; it concerns management decision and tactics applied by investor in the face of ESG risks. In the light of a rising risk of litigation related to considering of ESG risks by investors in their investment management[136], we state that a special clarification

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[135] *See* Report *Mainstreaming Responsible Investment*, World Economic Forum (WEF) and Account Ability, 2005

[136] *See* Article *Climate litigation against pension schemes – if not now, then when?*, in ResponsibleInvestor.com, 14 August 2018

must be provided for the means of risk management and related potential responsibilities. Such precision is necessary to inform an investor of litigation risks and of the level of necessary precaution to be applied in terms of ESG risk consideration to avoid their liability. Because if the definition of material risks is the first step in the investors' decision-making, their ultimate choice of action in the face of material ESG risks is the step that leads to a concrete outcome – impact on risk-adjusted return of their investments. The two form the basis of investors' responsibility and, thus, become a trigger of their liability.

See also Article *UK pension funds could face legal action over climate risk, ClientEarth warns*, in Business Green, 13 August 2018, available at https://www.businessgreen.com/bg/news/3060996/uk-pension-funds-could-face-legal-action-over-climate-risk-clientearth-warns *and* Article *Fund managers who ignore climate risk 'could face legal action'*, in The Guardian, 10 February 2016, available at https://www.theguardian.com/environment/2016/feb/10/fund-managers-who-ignore-climate-risk-could-face-legal-action

2. INVESTORS' LIABILITY FOR MANAGEMENT OF MATERIAL SUSTAINABILITY RISKS – NEED FOR CLARIFICATION

An investor is qualified as a fiduciary or as a trustee under the fiduciary duty standard. As a trustee, an investor is accountable for the trust fund she manages on behalf of beneficiaries and must personally make good any loss occasioned to the trust fund by his breach of trust and must personally augment such fund by the amount of any profits made by him in breach of his duty (Hayton, 1999). It means that each investment decision made by a fiduciary under her fiduciary duties can, in fine, bring about her liability. This is equally true for pension plans' managers; they are studied in this research as a concrete example of fiduciaries.

The existence of a risk for investors of being held liable in case of litigation is important for a proper enforcement of the fiduciary standards set by the regulator. As so, this liability risk provides investors with a quite concrete indicator of what investment decision would or would not be contested in court under the applicable fiduciary rules. It sets incentives to comply with the rule by adopting an optimal level of precaution in investment decision-making. This serves the primary objective of the trust fiduciary law, which is to provide a suitable protection to the investment funds' beneficiaries and participants. However, sometimes, the type of investment behaviour encouraged by the law enforcement tools (liability standards) does not totally coincide with the beneficiaries' protection objective set by the fiduciary regulation. In such cases, standards of liability could be relaxed. Consequently, it may result in incentivising some biased inefficient and inappropriate investment decisions (for example, herding) and in prioritization of inaction and passivity over a proper risk-management. Such bias in the investors' liability standard could be explained by a rooted conservatism in the interpretation by the judicial doctrine of what an efficient risk management is, especially in the face of highly uncertain and unaccustomed risk categories, like environmental, social and governance-related (ESG) risks.

The objective of this study is to analyse the incentives in terms of proper investment risk management provided to fiduciaries by the current fiduciary duty liability standard, i.e. enforcement framework, in relation to the integration of ESG risk factors as part of risk management. Once a risk factor is identified as material, fiduciaries have to decide on a mitigation action to apply. Here, we will clarify on where the current liability standard under the FD rule encourages investors to mitigate identified material ESG and on what implications such encouragement may have in terms of final beneficiaries' protection.

We will examine the conditions of the liability for institutional investors based on the example of pension funds. In addition, by analysing a recent litigation case, we will develop on the problematics related to the qualification of investors' liability for their ESG risk management decisions under the trust fiduciary law.

2.1. FD Legal Standard Perspective on Investors' Liability

The qualification of fiduciary relationships and duties in Europe is a matter of national jurisdictions and can offer different solutions in different European countries. Even if the European regulator will now be able to provide general guidance by stating a global position on the fiduciary duties of institutional investors[137], it is up to each national regulator to develop their own type of legal framework governing these duties in accordance with the specificities of the national law.

Introducing the idea of the European trust and fiduciary law, Hayton et al. acknowledged that to develop *a flexible concept through the courts and the legislature is never an easy task and always a lengthy task*. (…) *It is quite commonplace to state that the active role of the courts would be one of the main difficulties for the introduction of a trust into a civil law system would pose* (Hayton et al., 1999). And, talking about the national fiduciary regulation we observe numerous legal practices and available remedies offered to plaintiffs in

[137] In the light of the coming regulation on investors' fiduciary duties and ESG risk factors consideration as part of Sustainable Finance Action Plan of the European Commission established in 2018.

case of a breach of fiduciary duties. For instance, in Germany and in France we find legal formulations of the duty of care and of the duty of loyalty that relatively similar to the corresponding common law concepts[138]. However, no general concept in relation to these two concepts together (like *trust fiduciary law)* exist in these legal systems.

As a result, in the German law remedies in case of breach of duty of care and loyalty are available mostly under the general law of contract, which imply contractual liability for fiduciaries (in our case, investors). In France, a breach of trust is also viewed particularly as a breach of contract; with the contractual liability arising for fiduciaries in case of not respecting by them of the decided contract terms. Thus, such viewpoint offers naturally the ordinary remedies in case of non-performance of partial performance, late performance or improper performance of a contract. These actions may give rise to the attribution of a fine to the fiduciary: the restitution of losses to beneficiaries or, even, a replacement of the fiduciary. In Switzerland, the sanctions would mostly be payment of damages also mostly under contract law. In Danish and Dutch legal systems, the most evident remedy to award to beneficiaries in case of the fiduciary's misbehaviours in terms of provoking losses is to pay a compensation. In these cases, once again liability of the fiduciary will be of contractual nature[139].

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[138] Fiduciary Principles in European Civil Law Systems, Martin Gelter, Geneviève Helleringer, Law Working Paper 392/2018, March 2018: In German law, there is a duty of care (*Sorgfaltspflicht*) and a duty of loyalty (*Treupflicht*). In France, where agents owe a duty of care (*devoir de diligence*)… and which is sometimes referred to in a more explicit manner as a duty of "care and advice" (*devoir de diligence et conseil*); A duty of loyalty is also recognized, and often expressed as a duty of "loyalty and fidelity" (*devoir de loyauté et de fidélité).* Besides, *these distinct terms do not necessarily apply to all actors who bear fiduciary-like duties in the French system, such as agents, medical care-givers and directors.*

[139] See *Principles of European Trust Law*, Edited by D.J. Hayton, S.C.J.J. Kortmann, H.L.E. Verhagen, Kluwer Law International, W.E.J. Tjeenk Willink, Law of Business and Finance, Volume 1, 1999, pp. 120-214:

In German law, remedies against the trustee for specific performance, for an injunction to prohibit particular conduct, or for payment of damages for breach are available.

There are no specific provisions of this kind in Swiss law. The sanctions of violations of his obligations by the "fiduciant" (who is considered the absolute owner of the assets, and the rules of Article 394 and seq. CO on mandate, especially Article 398 CO on responsibility, seem to correspond to the rules of Article IV of the authors.) could be payment of damages or restitution of assets.

Gelter and Helleringer (2018) name the following reasons explaining this state of affairs of the European trust fiduciary law: (1) fiduciary relationship is not understood as a category that is fundamentally different from contract; (2) historically, the civil law has not always recognised fiduciary principles as general covering many areas of Law; (3) fiduciary duties are largely fractured due to the separation between civil and commercial laws in most jurisdictions in Europe, etc. However, generally, from the angle of investment risk management and losses avoidance objective, we could conclude that *if, in his investment or managerial role…the* [fiduciary] *neglects to exercise the standard of care (prudence) expected of him, he will be liable to make good any consequent losses* (Underhill and Hayton, 1967). In this case, the liability rule will get away from the classical contractual liability for non-respect of the contract terms to come closer to the negligence-based liability standard, which brings investors' responsibility for not managing investments properly (as compared to a hypothetical optimal management decision given the particularities of a fund). This interpretation of investors' liability brings us closer to the Anglo-Saxon qualification of fiduciary duties of investors as the trust law concept, as we will see it here further.

Unlike in the EU FD legal framework, in the Anglo-American fiduciary law we observe a tendency to harmonise FD approaches throughout states and on the federal level. Particularly, despite many differences in legal representation of fiduciary duties across states, a FD relationship in any of its manifestations is, first of all and always, an agency relationship. In such a relationship, the interaction between a fiduciary and beneficiaries is characterised by a strong dependence of the latter on the former (based on skill

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In France, the "constituent" and the "bénéficiaire" may therefore (1) seek specific performance whenever possible, if necessary subject to a fine for non-performance, enforced by the court; (2) seek damages for non-performance or improper performance of the duties; these damages are intended to compensate the losses incurred and lost profits (Article 1149 of the Civil Code) and French courts exercise considerable discretion in assessing them; (3) seek termination of the fiducie contract, with or without damages (Article 1184 of the Civil Code), etc.

In Netherlands, liability of the trustee in case of breach of trust follows from Article 6:74 ff BW in conjunction with the Articles 6:248 section 1 and 7:400 ff BW (contractual liability). The trustee must make good to any loss occasioned to the rust fund for which he is liable, and must make compensation out of his private patrimony.

deficit), an imperfect observability and information asymmetry (Sitkoff, 2011). Another peculiar feature of the fiduciary relationships is the separation between investment risk bearing (by beneficiaries) and investment management control (by a professional investor, i.e. the fiduciary). As a result, in this situation, fiduciary duties arise in order to restore the delicate balance between these two functions and to guarantee appropriate risk bearing by beneficiaries by stimulating investors (fiduciaries) to manage efficiently investment risks. Under the common law, agency relationships constitute by definition a trust – a relation of dependence, when one agent manages capital for another one - and, by that, are fiduciary in nature[140]. In their turn, the duties defined by trust fiduciary law are enforced predominantly by negligence-based tort-law liability framework in the Anglo-American trust law[141], even if some particular duties like the duty of loyalty were originally governed by the historical branch of the common law dedicated to fiduciary relationships – Equity[142].

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[140] *See* SPANGLER T., *Investment Management Law and practice*, Oxford University Press, 2010: Agency is the *fiduciary* relationship that arises when one person (a "principal") manifests assent to another person (an "agent") that the agent shall act on the principal's behalf and subject to the principal's control, and the agent manifests assent or otherwise consents so to act." (Restatement (Third) of Agency 2006, paragraph 1.01) (emphasis added)

[141] We consider tort legal framework for qualification of fiduciary duties, even if there are different views on particular duties, namely the duty of care and its qualification as a fiduciary duty, see:

See SHEPHERD J. C., *The Law of Fiduciaries,* Carswell, 1982, 415 p. The author writes that "…the duty of care is basically a management duty…[It] arises not only in fiduciary situations, but also in contractual and tortious situations…[and] has no necessary connection with fiduciary relationships".

See, EASTERBROOK F. H., FISCHEL D. R., Contract and Fiduciary Duty, *The Journal of Law and Economics*, Vol. 36, 1993, pp 425-446. The authors advance that that fiduciary duty standards are generally a simple set of default rules designed to supply rules of conduct that the parties implicitly agreed to respect but did not bothered to specify explicitly in the agreement.

[142] To paraphrase George Keeton, the distinction between the common law and equity is not just historical, but attitudinal. Like the equitable principles that created it, the fiduciary concept is premised upon broader principles of fairness and justice than the common law (…). The fiduciary concept takes its origin in equity. Equity works alongside the law, supporting it where it is deficient and enabling the law to adequately respond to the individual requirements of particular circumstances. It occupies a supplementary jurisdiction to the common law that supports and improves the latter without being inferior to it or lesser in importance. One of the primary ways in which the continued importance of equity is expressed in contemporary law is through the fiduciary concept. (*See* ROTMAN L. I., *Understanding Fiduciary Duties and Relationship Fiduciarity*, McGill Law Journal, Vol. 62, 2017, 67 p.)

Today, in the US law, we witness a strong harmonisation of practices and a kind of a merging of Equity with the common law, however, Equity is still distinguished and quite alive.

To explain this distinction between Trust law and Equity law in the common fiduciary law system, Flannigan (2004) gives the following example: in case of trust-based relationships, the duty to invest prudently is a duty imposed by trusts law and induces tort liability of negligence. In this case, negligence will be determined in court based on evidence stating the failure by an investor (fiduciary) to manage appropriately and efficiently investment-related risks (to take an efficient amount of precaution). Thus, even if a loss of capital has occurred, an investor will not be held liable for it unless it is proven in court that she managed risks ineffectively and inefficiently. On the other hand, such proscriptive fiduciary duties as to avoid conflict of interests and to prevent potential misbehaviour by a trustee in the view of gaining some personal benefit would be imposed by Equity-based fiduciary law (Flannigan, 2004), which would bring strict liability for a fiduciary (a trustee) in the big majority of cases.[143] Here, the strict liability will bring a direct responsibility of an investor (fiduciary) in any case of loss resulted from her misbehaviour. This difference can be important in some cases, as specific remedies (compensation of beneficiaries) may flow from breaches of duties under each of these two legal and liability regimes[144].[145]

The remedies available for breach of fiduciary duty [based on Equity] *are more varied than those available for breach of trust obligations are* (Moffat, 2009). They could include such *equitable remedies* as an injunction, a specific performance, an equitable compensation and an account for profits or a constructive trust. As a result, *breach of fiduciary duty* [Equity law] *can address both unauthorised gains to the fiduciary and actual losses to the beneficiary,*

[143] For instance, J.E. Penner in *The Law of Trusts* illustrates this distinction in the following way: *if the terms of trust permit a trustee to invest in shares, he is not in breach of trust if he does so* [(Trust law with Tort liability aspect)]. *However, if he invests in shares by purchasing his own shares in a company, he is in breach of his fiduciary duty due to the conflict of interests that this scenario creates (vs beneficiaries' interests)* [(Equity liability aspect)]. PENNER J. E., *The Law of Trusts*, Oxford University Press, 7th ed., 2010, 560 p.

[144] MOLINARI C., The future of fiduciary obligation for institutional investors, *Cambridge Handbook of Institutional Investment and Fiduciary Duty* ed. by James P. Hawley et al., Cambridge University Press, 2014, p.163: Whereas at common law, the normal remedy for loss is damages, Equity provides a much greater range of remedies.

[145] The available remedies depend on how the breached duties are classified and on the jurisdiction at issue. HO L., Attributing losses to a breach of fiduciary duty, *Tolley's Trust Law International*, Vol. 12, 1998, pp 66-76.

whereas breach of a trustee's duty of care [Trust law and Tort of negligence-based liability] *mainly concerns the latter*[146]. However, according to Spangler (2010), who bases his viewpoint on the observation of the Guerin v. R, op. cit. case, *North American courts have tended to extend fiduciary responsibility from a proscriptive to a prescriptive duty, such as to act in a beneficiaries' best interests (duty of loyalty)*.

Generally, in the current US legal practice, the duties of care, competence, and diligence are, essentially, negligence-based tort-law duties as they *denote the fact that the actor is required to conduct himself in a particular manner at the risk that if he does not do so he becomes subject to liability to another to whom the duty is owed for any injury sustained by such other, of which that actor's conduct is a legal cause*[147](Spangler, 2010). Under such legal circumstances, it is possible to state that claims for a breach of the fiduciary duty of prudence, are designed to redress primarily economic loss due to mismanagement of capital. Beneficiaries who suffer loss as a result of such breach of fiduciary obligation are entitled to reclaim the loss that they have suffered. In respect of the fiduciary investment management, it is fundamental that the fiduciary owes duties to beneficiaries who, in their turn, possess particular rights in terms of appealing against the fiduciary's management decisions. Otherwise saying, *to be able to enforce their rights it is crucial that the beneficiaries have a right to make the* [fiduciary] *account for his management of the* [capital] (Hayton et al., 1999). To provide beneficiaries with this right is the main objective and the existential goal of the trust fiduciary law.

Both in the American and in the European national jurisdictions, beneficiaries have personal rights to sue fiduciaries in case of a breach of their duties, but under different liability regimes (contractual liability under the law of contracts versus negligence-based tort law liability under the trust fiduciary

[146] Fiduciary Law and Responsible Investing: in nature's trust, Benjamin J. Richardson, Routledge Research in Finance and Banking Law, 2013, Page 140-143: *Even though there may be concurrent claims in contract or trusts law, a plaintiff nonetheless often has a powerful incentive for invoking fiduciary liability in order to obtain more diverse and substantial remedies.*

See also The Economic Structure of Fiduciary Law, Robert H. Sitkoff, 91 Boston University Law Review, 1039-1050 (2011), pp. 1048-1049

[147] Restatement (Third) of Agency, 2006, paragraph 8.08

law). However, considering that trust fiduciary duties in the general common law system are first of all default rules, meaning that in some legal domains (like for example consumer protection) fiduciary duty rules can be modified by specific contract, or trust agreement clauses[148], we see that the EU and the US fiduciary frameworks could coincide at least in some legal spheres. Particularly, according to the Uniform Prudent Investor Act (§229) each of the prudent investor acts is a default rule that can be altered by the terms of the trust agreement itself.

When it comes to Equity law, today, the distinction between Equity law and Trust law is omitted in many cases of fiduciary duties interpretation and is explicitly disregarded by many legal practitioners and academic scholars, particularly by academics in the field of Law and Economics. The fiduciary relationship is analysed under the same harmonised legal framework of Trust. Thus, in this research, we will adopt the same angle of analysis and will consider only the legal framework of Trust Fiduciary Law and the related negligence-based Tort-law liability definition. We now put these legal elements in perspective of the US pension schemes fiduciary regulation with the objective to demonstrate on the concrete example of a specific investor type – pension plans, the general conditions for their liability in case of a breach of their FD.

Thus, in this investigation on the subject of institutional investors risk and investment management in the face of ESG risks, our full attention will be riveted primarily and specifically to the core element of the US fiduciary duties regulation for pension schemes – the US Employee Retirement Income Security Act (ERISA). Particularly, we build our analysis of pension plans' fiduciary liability on the ERISA trust fiduciary provisions and, precisely, on the ERISA-based fiduciary duty of care (prudence) and the corresponding tort liability of

[148] *The future of fiduciary obligation for institutional investors* by Claire Molinari in Cambridge Handbook of Institutional Investment and Fiduciary Duty, Chapter 13, p. 164: By contrast, the remedy for breach of contract involves putting the injured party into the position he or she would have been in had the breach not occurred.

See also The economic loss rule and fiduciary duty claims: Nothing stricter than the morals of the marketplace, Amanda K. Esquibel, 42 Villanova Law Review, Vol. 42, Iss. 3, Art. 2, 789 (1997): The new York federal district court in 2007 explained that as a matter of policy, "individuals in position of trust (…) could be liable for breach of fiduciary duty, even if the underlying conduct also forms the basis of a breach of contract claim. (Bullmore v Banc of Am Sec, 485 F Supp 2d 464, 471 (SDNY 2007)).

negligence[149]. We note that from this point of view, only the US trust fiduciary law provides a sufficient legal basis to produce this analysis. As it was stated, the European law does not yet have a structured European Fiduciary Duty legal standard and a common liability framework. Besides, in this analysis we will consider the first registered litigation case related to the consideration of ESG risks by pension plans as part of their fiduciary duties, which occurred under the US federal jurisdiction representing a case of breach of the ERISA-based fiduciary duty of care (prudence).

ERISA was adopted by US Congress in 1974 and the US DOL was named to perform a supervision of the most of the American retirement schemes covered by ERISA. At the same time, some pension plans, for example, California Public Employees Retirement System (one of the largest funds in the US), are not subject to ERISA[150]. However, even if, in general, differences between ERISA fiduciary obligations and other local legal frameworks are minor, some harmonisation initiatives have progressively appeared. In 1992, then in 2000, the US National Conference of Commissioners on Uniform State Laws attempted to codify various existing state and local trust fiduciary law practices into a model statute, the Uniform Prudent Investor Act (UPIA) and a uniform statutory code, the Uniform Trust Code (UTC) respectively. These global texts aim primarily to provide guidance; as a result, they are not binding, however quite influential in the US legal practice.

In general, in case of a breach of the duty of prudence (care) under the general interpretation of the US trust fiduciary law the available and most common remedy would be a monetary compensation for actual losses suffered

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[149] …tort law has traditionally performed a gap-filling function with respect to contractual relationships. More specifically, fiduciary duties have traditionally stepped in to compensate individuals, even when the relationship was otherwise governed by a contract. *See* Amanda K. Esquibel, *The economic loss rule and fiduciary duty claims: Nothing stricter than the morals of the marketplace*, Villanova Law Review, Vol. 42, Iss. 3, Art. 2, 789 (1997)

[150] See *The basis of fiduciary duty in investment in the US*, Jay Youngdahl, Chapter 3, Cambridge Book of Institutional Investment and Fiduciary Duty, Cambridge University Press, 2014 (pp. 20-31): ERISA applies only to certain classes of private employee benefit trusts. Many such funds that appear to be similar and that generally cover public employees are not subject to this federal statute, but are subject to state or local law and regulation. This situation produced varied notions of fiduciary duty in investment and thus causes consternation to trustees and fund attorneys alike.

by beneficiaries[151]. This is true for many local (state-wide) US fiduciary duty regulation frameworks; but, when it comes specifically to ERISA fiduciary obligations and its related provisions in case of a duty breach, they remain quite specific. Particularly, additional penalties and disciplinary proceedings for duties breaches may also be imposed under ERISA. For instance, the US Department of Labor (DOL)[152] *may levy a monetary fine against a trustee in an ERISA-regulated pension fund for a statutory breach* (Youngdahl, 2011).

Today, ERISA covers both defined benefit (DB) and defined contribution (DC) non-state pension funds, among which are 401(k) plans, 403(b) plans, employee stock ownership plans (ESOPs) and profit-sharing plans. As for pension plans fiduciary provisions under ERISA, we note that the fiduciary duty regime imposed by ERISA on trustees (fiduciaries) is separate from the general US law of trusts. For example, ERISA prohibits, as against public policy that views FD as default rules, *any provision in an agreement or instrument, which purports to relieve a fiduciary from responsibility or liability for any responsibility, obligation, or duty under this part*. ERISA § 410(a).[153] This means that all FD obligation under ERISA are mandatory and must be completed. At the same time, as in the general US trust fiduciary law framework, under ERISA as well we find elements of both Trust-related and Equity-related civil liability procedures.

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[151] A principal has the potential to receive far greater amounts of compensation where there has been a breach of fiduciary duty than where there has been a breach of the duty of care, because equitable compensation is not subject to the principles of foreseeability, contributory negligence or the duty to mitigate, which often limit the quantum. (Clarke, op. cit., 64). We will discover these principles later in this Chapter.

[152] Interesting to note that since March 2000, the US DOL maintains a voluntary correction program for fiduciary breaches. The Voluntary Fiduciary Correction Program (VFCP). VFCP allows fiduciaries who have identified some particular ERISA violations to take corrective action in order to remedy the breaches and voluntarily report the violations to the DOL. By doing so, they avoid becoming the subject of enforcement actions. The Program is available here: https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/correction-programs/vfcp

[153] *Fujikawa v. Gushiken*, 823 F.2d 1341, 1345 (9th Cir. 1987), *cert. denied*, 487 U.S. 1240 (1988); *see also IT Corp. v. General American Life Ins. Co.*, 107 F.3d 1415 (9th Cir. 1997) (*…a contract exonerating an ERISA fiduciary from fiduciary responsibilities is void as a matter of law*)

Kayes v. Pacific Lumber Co., 51 F .3d 1449, 1460 (9th Cir.), *cert. denied*, 116 S. Ct. 302 (1995) ("any interpretation of the Plan which prevents individuals acting in a fiduciary capacity from being found liable as fiduciaries is void")

Chicago Housing Authority v. J.A. Hannah Investment Advisory Service, Inc., No. 95-C-5251 , 1996 U.S. Dist. LEXIS 8046 (N.D. III. May 9, 1996) (refusing to uphold exculpatory clause in investment manager's contract)

In this light, for Hylton and Muir (2004), *one of the most significant unresolved questions is the extent to which ERISA incorporates traditional trust law remedies* in case of pension schemes' liability for a breach of their FD. The authors state numerous court opinions concerning the presence of trust law principles in ERISA, even if they also reflect the limits of this presence and of the efficiency of trust law tools in fiduciary breach case[154]. Generally, with the presence of both trust and equity laws at the basis of the ERISA fiduciary obligations, a fiduciary's liability for a breach may include various fine penalties, compensation requirement, a removal from his or her fiduciary position or, even, a twenty percent penalty assessed by the US DOL and, in extreme cases, criminal penalties. A suit can be brought to court by a participant, a beneficiary or, in some cases, the Secretary of Labor (DOL). Class actions are possible.

In a nutshell, ERISA provides three general enforcement (liability) provisions in case of a breach of fiduciary duties:

> (1)ERISA 502(a) (1). Particularly, the part A of this paragraph allows to bring suit against a fiduciary who failed to provide required information upon request. The part B allows a plaintiff to bring a civil action with the objective to recover benefits or to enforce his rights under the terms of the plan[155].
>
> (2)ERISA 502(a) (2). This provision allows claims for relief under ERISA 409 stating that in case of a breach of their duties (proclaimed by ERISA) fiduciaries are personally liable to make good to the plan any losses caused by the breach[156].

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[154] *See Central* States, *Southeast* & *Southwest Areas Pension Fund v. Central Transport, Inc.,* 472 U.S. 559, 570 (1986) ("Rather than explicitly enumerating all of the powers and duties of trustees and other fiduciaries, Congress invoked the common law of trusts to define the general scope of their authority and responsibility."). *However, see Howe v. Varity Corp.,* 116 S. Ct. 1065 (1996) ("we also recognize, however, that trust law does not tell the entire story").

[155] 29 U.S. Code § 1132. Civil enforcement. Find it here: https://www.law.cornell.edu/uscode/text/29/1132

[156] ERISA Section 409 makes restitution to the plan of losses resulting from the fiduciary breach; disgorges profits obtained by the fiduciary through the fiduciary breach; allows other equitable or remedial relief, including removal of the fiduciary.

> (3)ERISA 502(a) (3). It allows for suits to *enjoin any act or practice which violates any provision of* [ERISA] *or the terms of the plan or to obtain other appropriate equitable relief (i) to redress such violations or (ii) to enforce any provisions of* [ERISA] *or the terms of the plan*[157].

It is possible to say, that Paragraph 502(a) (3) offers remedial provisions that might potentially cover any possible case of FD breach. It proposes equitable relief and thus is sourced directly from Equity law. However, if the plaintiff can reach an adequate remedy under either 502(a)(2) or 502(a)(1)(B), the 502(a) (3) might not be available[158].[159]

However, in our case of analysis of risk and investment management under the investors' fiduciary duty of care (prudence), we are particularly interested in Section 409(a) of the US ERISA. This article contains provisions that make a fiduciary (investor, in our case, a pension scheme) responsible for losses resulting from a risk mismanagement, which represents a breach of the duty of prudence (care), which is also called the duty of prudence and which is governed by the tort liability of negligence mechanism. To prove a breach of the duty of care and to hold an investor liable for a loss related to her risk and investment management, the court would need to go beyond a statement of a loss (damage) and of a causation relation between an investor's management action and the loss occurrence. This would enough to engage responsibility under strict liability rule used in Equity law but not under tort liability of negligence. In case of the duty of care standard, the court would need to state the third and the most fundamental element of liability – imprudence of the investor's decision-making and risk management action. This means that the court would have to prove the lack of effort made by a pension scheme manager to take enough precaution and make a reasonable risk and investment management decision. To do this, the court would use the Prudent Person

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[157] 29 U.S. Code § 1132. Civil enforcement. Find it here: https://www.law.cornell.edu/uscode/text/29/1132

[158] *See Varity Corp. v. Howe*, 516 U.S. 489 (1996). Also, the Supreme Court held in *Mertens v. Hewitt Assoc*., 508 U.S. 248 (1993), that § 502(a) (3) provided only for traditional "equitable" relief – e.g., injunctive remedies and the monetary remedies of disgorgement and restitution – and not for legal "damages." The courts have struggled to define what is "equitable" relief under *Mertens* as well as what is "appropriate" relief under *Varity*. Individual damage also covered by it.

[159] Remedies are paid to the plan as a whole, even if an individual brought suit. (*See Mass. Mut. Life Ins. Co. v. Russell*, 473 U.S. 134, 148 (1985)).

rule or, in case of professional investors, the Prudent Investor standard, hypothesising what any other professional investor in this role and in the face of the same risks would do and comparing the actual investor's action to this hypothesis. The Prudent Investor standard is defined by Section 404(a) (1) of the US ERISA and will be presented further in **Chapter II** of this thesis.

Thus, *A person who is an ERISA fiduciary can be personally liable for a breach of fiduciary duty and, in such a case, this fiduciary will be required to restore any losses to the plan or to restore any profits made through improper use of the plan's assets resulting from the breach*[160]. Naturally, if no loss results from a breach, then no monetary liability exists[161]. In determining losses, US courts arrived to various conclusions and solutions, most of them based on a logic that economists would call *opportunity cost analysis*. For example, in *Donovan v. Bierwirth* the court held that the assessment of *loss* implies a comparison between the actual return of the pension plan based on the contested (by court) action of the fiduciary and a potential return that would have been earned if the assets had been available for other investment choices[162]. Others compared the occurred loss (actual ultimate return) against an originally expected return of this investment decision or prevailing interest rates[163].[164]

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[160] 29 U.S. Code § 1109 - Liability for breach of fiduciary duty (Pub. L. 93–406, title I, § 409, Sept. 2, 1974, 88 Stat. 886.)

[161] *Brandt v. Grounds*, 687 F.2d 895,898 (7th Cir. 1982) (Section 409 *clearly indicates that a causal connection is required between the breach of fiduciary duty and the losses incurred by the plan*). See also *Friend v. Sanwa Bank Cal.*, 35 F.3d 466 (9th Cir. 1994) (*ERISA holds a trustee liable for a breach of fiduciary duty only to the extent that losses to the plan result from the breach*). See also *Kuper v. Lovenko*, 66 F.3d 1447 (6th Cir. 1995) (*a plaintiff must show a causal link between the* [breach] *and the harm suffered to the plan*).

[162] *Donovan v. Bierwirth*, 754 F.2d 1049 (2d Cir. 1985)

[163] For instance, *Dardaganis v. Grace Capital, Inc.*, 889 F.2d 1237, 1243-4 (2d Cir. 1989).

[164] *Trillion Dollar Transformation: Fiduciary Duty, Divestment and Fossil Fuels in an Era of Climate Risk*, Report by CIEL (Center for International Environmental Law), December 2016:

Even when no actual loss was found, trustees have had to pay damages in the difference between what the pension plan would have earned had the assets been prudently invested and what the pension plan had earned due to the actual imprudent investment (*See Pepper*, 663 F.3d at 221. *Plasterers' Local Union No 96. Pension Plan v. Pepper*, 663 F.3d 210, 221 (4th Cir. 2011). *Indeed, "an ERISA plan need not demonstrate that it suffered a loss in order to obtain a disgorgement remedy."* (*See Trs. Of the Upstate N.Y. Eng'rs Pension Fund v. Ivy Asset Mgmt.,* 131 F. Supp. 3d 103, 128 (S.D.N.Y. 2015)).

This logic is also used in particular ERISA ESOPs-related[165] fiduciary breach claims related to stock drops that will be presented further in the context of a recent litigation case. The so-called *alternative action test*, which is specific to ERISA ESOPs cases of stock drop (losses) due to the duty of care breach, implies a comparison of the loss resulted from the action taken by a fiduciary in the pension fund management and an expected outcome of an alternative action that this fiduciary could have performed instead. This liability mechanism mirrors (in this particular type of cases) the Prudent Investor Rule, by comparing the investor's actual decision and risk management action to its potential alternative. We note that here the liability of the fiduciary triggered by the difference (in terms of avoided loss) between the actual outcome (loss) and an expected outcome of the identified alternative action will depend not only on the outcome itself (loss) but also on the effectiveness of the alternative action in terms of avoiding loss.

Consequently, in the context of risk management by investors, we are now talking not only about the consideration of all material risk factors, including ESG risks, but also about the assessment of an expected rate of success of a risk management action. Together, these two elements lay at the basis of investors' decision-making under ERISA fiduciary duty of prudence. However, if this *alternative action test* aims to provide a protection to pension funds' beneficiaries by defending an efficient liability principle, it seems that, in some cases, this liability mechanism encourages fiduciaries' inaction in the face of some risks even if some losses have important chances to be avoided if the risks are managed.

According to the rule of law, ERISA prudent investor must manage a pension plan *with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims* (Section 404 (a) (1) of ERISA). The duty of prudence (care) is owed to the plan and its participants, its beneficiaries. Today, this standard of prudence (the Prudent Investor Rule) is considered by some

[165] Individual account defined contribution plans (EIAPs), such as 401(k) plans and employee stock ownership plans (ESOPs), offer stocks of the plan sponsor as an investment option to plan participants. Basically, employees invest in their employer company via the established internal private pension fund.

legal practitioners to be the highest known to the law[166]. However, the current prevailing interpretation of the *alternative action test* seems to oppose to the rule of law. Today, this liability mechanism is more and more frequently qualified as an insurmountable liability standard imposing an *insurmountable standard of proof*[167] in case of ERISA ESOPs stock drop claims (limiting radically potential of fiduciaries' liability in case of loss). This inconsistency between the incentives set to investors' decision-making by the rule of law and by the liability standard limits drastically and unreasonably the number of cases that can possibly survive in court. This situation, where fiduciaries' legal responsibility in case of loss can hardly ever be engaged, risks infringing the primary objective aimed by the ERISA fiduciary duty of prudence (care) – beneficiaries' protection.

2.2. FD Judicial Doctrine Perspective on Investors' Liability

The US ERISA sets forth specific rules that govern the conduct of fiduciaries (investors) with regard to pension plans management, including employee stock ownership plans (ESOPs), which is a specific form of Defined Contribution (DC) pension structures designed to invest primarily in qualifying employer securities[168]. Simply saying, within this structure, an employer sets a pension plan for her employees and then invests the capital raised on contributions by purchasing the shares of the employer company itself. An ESOP may acquire the employer securities directly from the employer who sets this pension scheme, from a current shareholder or by purchasing the securities in the organised market. Due to their nature (the main capital share of an ESOP being invested in the employer company),

[166] Howard v. Shay, 100 F.3d 1484, 1488 (9th Cir. 1996) (quoting Donovan v. Bierwirth, 680 F.2d 263, 272 n.8 (2d Cir. 1982)). See also Horn v. McQueen, 215 F. Supp. 2d 867, 874 (W.D. Ky. 2002)

[167] *In re BP P.L.C. Securities Litig.*, 2017 WL 914995, at *3, *3 n.7 (S.D. Tex. Mar. 8, 2017).

[168] In general, 'qualifying employer security' represents a common stock issued by the employer readily tradable on an organised securities market. In order to qualify as an ESOP, a pension scheme must provide for pass-through voting with regard to shares allocated to participants' accounts. Explanation on pass-through voting: In non-public ESOP companies, voting rights on shares allocated to ESOP accounts must be *passed through* to ESOP participants for votes on major corporate matters (mergers, consolidation, liquidation, sale of the company's assets, etc.). Also, the ESOP is the only plan that may borrow funds to acquire and hold employer securities ('*leveraged ESOP*').

ESOPs are exempt from the ERISA investment diversification requirement. Under the US ERISA, ESOPs had gained confidence. They inspired trust as financial structures that have a potential to encourage employee ownership in general, to increase the base of ownership of capital among American businesses as well as to enlarge corporate finance instruments (due to their tax-preferred status) and, even, to serve as management tool for hostile takeover defence (Arsenault, 2000).

ERISA ESOPs stock drop cases are quite common and their original objective was to restore losses caused by a breach of fiduciary duty of care by a trustee (a fiduciary who is administrator of the pension fund) to the fund, and, as a result, implicitly to its beneficiaries (employees). However, how to achieve this original objective was never an easy question for the judges deciding on such cases. Before the famous decision by the US Supreme Court in *Fifth Third Bancorp v. Dudenhoeffer* in 2014, this issue was complicated by the general presumption in the US circuit courts that ESOPs trustees when invested in their company stock respected naturally their fiduciary duties by acting prudently. This means that such *self-financing* was considered a prudent investment, or an investment decision compliant with the Prudent Investor requirements of the US ERISA. The existence of this presumption made practically impossible for beneficiaries (employees who acted as plaintiffs) to bring in court a claim of losses of the pension fund's capital due to imprudent investment when this investment was made in the company's shares.

Such interpretation by the market and the legal practitioners of the *prudential* quality of the company's own stocks was promoted with the intention of the US Congress. The US regulator aimed *not only to encourage and protect employee savings* [via ESOPs], *but also to promote employee ownership and to act as tools of corporate finance, both goals in their own right.* As a result, *courts considering ESOP participants' breach-of-fiduciary-duty claims have been wary of defeating Congress's purpose of encouraging such plans by creating liability for fiduciaries facing a volatile market and conflicting goals* (Grosbard, 2017). Consequently, since the establishment of ERISA regime in 1974 and until the decision of the US Supreme Court in *Fifth Third Bancorp v. Dudenhoeffer* in 2014, this presumption of prudence of ESOP fiduciaries was prevailing in US jurisdiction unless a plaintiff

could prove an abuse of discretion[169]. To illustrate the imbalance created by this state of affairs, we bring an example of a court, which once decided that a seventy-five percent drop in a company's stock price was not in itself a fact that could overcome this presumption of prudence of the company's stock purchasing by its pension plan[170]. A long series of such cases provoked a revision of the Prudent Investor standard for ESOP investments. And, in 2014, judging the *Fifth Third Bancorp v. Dudenhoeffer* case the US Supreme Court abrogated the prudence presumption[171] for the company's own stocks investments, promising a new era in the US ERISA ESOPs tort fiduciary litigation.

The *Fifth Third Bancorp v. Dudenhoeffer* case was related to the financial crisis in the times of the Great Recession in the US (2000 to 2010). The plaintiffs, employees and participants in the ESOP of Fifth Third Bancorp bank, alleged that the bank's investment in its own stock had become *overvalued and excessively risky*. The plaintiffs filed a claim for the breach of duties by the fiduciary by failing to act on non-public information, as according to plaintiffs the fiduciaries employed as the bank's officers made material misstatements about the company's financial state and perspectives. Otherwise saying, the plaintiffs alleged that the fiduciaries, even having anticipated a potential drop of the price of their company's stock (the actual drop being of seventy-four percent after the market crushed in 2007-2009), continued to hold and buy its shares. It is under these circumstances that the Court held explicitly that *the law does not create a special presumption favoring ESOP fiduciaries. Rather, the same standard of prudence applies to all ERISA fiduciaries . . .*[172].

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[169] *See* Grosbard R., *The Duty to Inform in the Post-Dudenhoeffer World of Erisa*. Columbia Law Review (2017): This presumption of prudence was articulated by the Third Circuit in *Moench v. Robertson*, which offered several reasons for adopting such a deferential standard and favouring the goals of ESOPs over the *stringent fiduciary duties* of ERISA. The *Moench* court feared that subjecting fiduciaries to stricter judicial scrutiny would *risk transforming ESOPs into ordinary pension benefit plans*, thus frustrating Congress's purpose. The court, noting that the very existence of ESOPs demonstrates the per se value in employee ownership despite the risks to participants' financial gains, concluded that *the policies behind ERISA's rules governing pension benefit plans cannot simply override the goals of ESOPs, and courts must find a way for the competing concerns to coexist*. (…) After the Third Circuit established the *Moench* presumption, the Second, Fifth, Sixth, Seventh, Ninth, and Eleventh Circuits adopted this standard.

[170] *Kirschbaum*, 526 F.3d at 255 n.12 (citing Wright v. Or. Metallurgical Corp., 360 F.3d 1096, 1098 (9th Cir. 2004)).

[171] 134 S. Ct. 2459, 2463 (2014): *We hold that no such presumption applies*.

[172] 134 S. Ct. 2459, 2467 (2014)

Justice Breyer, who authored the opinion, also provided some guidance on the evaluation of ERISA ESOP fiduciary breach cases. Namely, he recalled that ERISA fiduciary duties should first of all be considered in the context of securities laws, meaning that they cannot require fiduciaries to break securities laws. He also clarified that in order to arrive to a conclusion on whether an ERISA ESOP fiduciary breached his duties the court should evaluate what decision would have been taken by a *Prudent fiduciary* in the same circumstances. More precisely, this means that in such cases, plaintiffs must allege in their complaint that a *prudent fiduciary in the same position 'could not have concluded' that the alternative action 'would do more harm than good'*[173]. Simply saying, plaintiffs need to prove that an alternative action like refraining by a fiduciary from purchasing more stock or disclosure by him of material information would provide a better outcome (less loss) than the actual stock drop occurred due to the actual action of the fiduciary. However, this so-called *alternative action test,* the proof of which is imposed on beneficiaries (plaintiffs) trying to engage liability of a fiduciary in court in order to protect their pension capital, appeared to represent a standard of proof quite difficult to attain in practice.

In recent years, ERISA ESOP *stock drop* suits have been the most common form of ERISA litigation involving employer stock. These cases, based on the allegations by plaintiffs that the fiduciaries breached their fiduciary duty of prudence by allowing participants to continue to invest in the employers' stock when it was actually imprudent to do so, are highly numerous. Interestingly, the US courts tend to disfavour these claims, rarely finding that the employer acted imprudently and demanding a high level of certainty and direct facts on the expected beneficial value of a potential alternative management action in terms of an associated positive outcome (i.e. avoided loss in shares' value).

One of the important explanations of such position of the courts concerning ERISA ESOP stock drop cases is the fact that in these lawsuits the courts find themselves in a position to achieve a double objective again. Namely, they must account equally for beneficiaries' protection (by enforcing the respect of the fiduciary duties by fiduciaries) and for a potential conflict with insider trading laws (when such claims are based on the non-use of insider information to prevent a loss

[173] Id. In *Amgen Inc. v. Harris* 136 S. Ct. 758, 760 (2016) (quoting *Dudenhoeffer*, 134 S. Ct. at 2463).

of capital)[174]. It should be clarified at this point that generally, there are two liability claims strategies in ERISA ESOPs stock drop cases: (1) claims based on public information and (2) claims based on private or 'insider' information[175]. In our study, we will pay attention particularly to the second case when we will analyse the recent case of ERISA ESOP stock drop litigation in relation to ESG risks management by an investor.

Aiming at two targets with the same shot, the US Supreme Court attempted to balance the fiduciary's duties and the risk of insider trading by creating the *alternative action test* and introducing it as part of the ERISA ESOP stock drop cases' *pleading standard* as a form of the standard of proof to engage a fiduciary's liability. However, the balance seems not to be achieved and this test seems to provide a quite tough judicial judgement framework reducing inefficiently beneficiaries' protection. In addition, the courts applying this test tend to tighten it further. Thus, to survive a motion to dismiss in such litigation cases, a plaintiff must plead: (1) alternative action that the ESOP fiduciary could have taken that would have been consistent with the securities laws, and (2) facts to demonstrate that a prudent fiduciary in the same circumstances *could not have concluded* that such alternative action would do *more harm than good* to the plan (namely *by causing a drop in the stock price and a concomitant drop in the value of the stock already held by the fund*[176]*)*. Furthermore, this demonstration should be clear and certain.

As a result, many legal practitioners find it as difficult (even impossible) to prove a breach of fiduciary duties under this *alternative action test* as it was in the times of the application of the prudence presumption for a company's own stocks before 2014. In *Whitley v. BP* the court found that *under the Supreme Court's formulation, the* ***plaintiff bears the significant burden of proposing an alternative***

[174] The same situation as it was in the case of the application of ERISA to ESOPs by the US Congress, when the pursued goal was to increase protection of beneficiaries and popularity of the ESOPs (employees participation in their company's capital).

[175] Plaintiffs allege that fiduciaries either (1) should have known, on the basis of publicly available information that the market had overvalued the company stock, and thus, that the fiduciaries should not have offered or continued to offer the company stock as an investment option OR (2) were aware of insider information that, if known to the public, would negatively impact the value of the company stock, and that these fiduciaries should have acted upon this information to protect plan participants from the decline in value of the company stock, and resulting losses in their retirement plan account balances.

[176] *Dudenhoeffer*, 134 S. Ct. at 2473

course of action so clearly beneficial *that a prudent fiduciary could not conclude that it would be more likely to harm the fund than to help it*. Consequently, the claim was dismissed on the grounds of the insufficiency of proof of the benefits of the proposed alternative actions. The same we observe in *Amgen Inc. v. Harris*. Even if the Ninth Circuit court had found allegations sufficient because it was *plausible* that the fiduciaries could avoid undue harm to plan participants by adopting an alternative action (by hedging the stock drop risk), the US Supreme Court reversed this decision, by stating that *plaintiff's complaint itself must contain* ***facts and allegations sufficient*** *to support this proposition*. In *In re JPMorgan Chase* (2016 WL 110521 at *4) *the court reasoned that the plaintiffs must plead* ***enough facts to plausibly allege*** the effectiveness of the proposed alternative action[177]. Generally, in relation to ERISA ESOP stock drop cases, the US Supreme Court defends a position that *on a motion to dismiss, a court cannot merely presume that* [the alternatives proposed by plaintiffs] *would or could* satisfy the alternative action test of the pleading standard[178]. *Conclusory statements to this effect will not suffice*[179].

Interestingly, in many of such legal cases, claims brought by plaintiffs are backed by the same alternative action suggestions as it was in the very first lawsuit of this type - *Fifth Third Bancorp v. Dudenhoeffer*. Namely, plaintiffs usually assert that rather than continuing to invest in the company's stock, the fiduciaries should have (1) *sold off the ESOP's holdings of company stock*; (2) *refrained from purchasing more stock*; (3) *cancelled the plan's ESOP option*, or (4) *disclosed the negative inside information to engender market correction*. However, the *Dudenhoeffer* (134 S. Ct. at 2470) judicial judgement guidance is not followed by the courts with the same enthusiasm. Despite the proposition by the US Supreme Court that courts should accomplish the *important task* [related to the judgment on the potential

[177] Many of the alternative actions proposed are rejected by courts on the basis of the assumption that they could not possibly reduce losses, however, could potentially increase them at some point due to the reaction of the market to them. Oddly, the fear to spook the market is one of most frequent arguments used by judges against alternative actions.

[178] *See* Webinar *ESOP Companies and ESOP Fiduciaries: Standard of Fiduciary Duties, pleadings Requirements, and asset Sales*, Lessons From Recent Case Law for Minimizing and Defending Litigation, by Strafford, August 23, 2017

[179] *See* Joseph C. Faucher and Dylan D. Rudolph *ERISA Stock Drop Cases Since Dudenhoeffer: The Pleading Standard Has Been Raised*, Journal of Pension Benefits, December 2017: *In other words, a plaintiff must plead specific facts supporting the proposition that no prudent fiduciary, facing the same situation, could conclude that the proposed alternative action would harm the plan to a greater degree than if the fiduciary did nothing at all*.

effectiveness of alternative actions] *through careful, context-sensitive scrutiny of a complaint's allegations*, today, most of ERISA ESOP stock drop cases do not withstand the motion to dismiss due to an appearing mistrust of judges towards expected effectiveness and efficiency of proposed alternative actions. *As a result, the ongoing viability of so-called stock drop cases is uncertain*[180] and with it the beneficiaries' protection force of the ERISA fiduciary duty of prudence as applied to ESOPs in case of stock drops. For now, there exist only few litigation cases, in which the court allowed claims based on inside information to proceed beyond a motion to dismiss on the grounds that *it would be premature to dismiss Plaintiffs' Non-Public Information Claim at this stage in the proceedings, prior to fact and expert discovery. The Court is unwilling to find that Plaintiffs' alternative options fail as a matter of law without development of the factual record and the aid of expert testimony*[181].[182]

This problem of the insurmountable burden of proof and of the alternative action qualification by the US judicial doctrine in the US ERISA ESOPs stock drop claims applies equally in case of an investment risk management decision by an investor (fiduciary) in the face of Environmental, Social and Governance-related (ESG) risk factors. The first and only publicly discussed litigation case of its kind falls into this category; it is an ERISA ESOP stock drop case that failed to pass the alternative action test and was dismissed. The lawsuit was started on the basis of a pension fund's losses provoked by an inaction of a fiduciary in the face of sustainability or ESG risk factors, particularly, the climate change risk of stranded assets.

In *Fentress v. Exxon Mobil Corp*., the corporation and some of their senior corporate officers having served as fiduciaries to the Exxon Mobil Savings Plan (EMSP) were challenged in their management of the pension plan by their current

[180] *See* Joseph C. Faucher and Dylan D. Rudolph *ERISA Stock Drop Cases Since Dudenhoeffer: The Pleading Standard Has Been Raised*, Journal of Pension Benefits, December 2017: *With few exceptions, the lower federal courts have ruled in favor of defendants in the wake of Dudenhoeffer*. Or, also: *it is even more difficult for plaintiffs in these cases to state a viable claim.*

[181] *In re* SunTrust Banks, 2015 WL 12724074, at *4

[182] Another case that could be stated here is *Murray v. Invacare Corp*. 125 F. Supp. 3d 660, 663 (N.D. Ohio 2015), in which the court recognised the potential effectiveness of the proposed by plaintiffs alternative action.

and former employees (beneficiaries of the ESMP and, hereafter *plaintiffs*)[183]. The plaintiffs alleged that Exxon and the trustees *knew or should have known that Exxon's stock had become artificially inflated in value due to fraud and misrepresentation*[184]of some elements of the corporate performance, and, consequently, represented an imprudent investment (inside information-based claim). This assertion was made on the basis of losses suffered by the EMSP fund as a result of the drop in the price of the companies' shares (we note that Exxon shares represented the single largest plan holding). The main reason of these losses was stated by the plaintiffs to be caused by one of the climate change risks, namely the risk of stranded assets. The risk of stranded assets arises from the concept of the impossibility for the fossil fuels resources exploitation industry (and Exxon represents this industry) to extract the whole volume of identified and owned fossil fuel reserves due to potential future economic and legal restrictions on carbon emissions aiming to mitigate the systemic risk of climate change. This means that some part of the available fossil fuels resources would be blocked by such future economic or regulatory restrictions on the industry, their extraction will not be possible and these assets would become stranded (existent, but impossible to use). As a result, the total value of assets held and allowed for exploitation would drop for the companies of the extractive oil and gas industry. This would result in the depreciation of their stocks on the financial market.

Particularly, the plaintiffs alleged that Exxon has (1) *understood for decades the environmental impact of burning fossil fuels, despite having funded climate change denial research, think tanks and publications*; and (2) *potentially defrauded its investors by overstating the value of its oil reserves*[185]. As so, plaintiffs asserted that Exxon concealed the information about a part of its oil reserves that were deemed to remain blocked (not extracted or stranded) because of the climate change risks. According to the plaintiffs, once it was

[183] It is important to note that here and in general in this thesis, we addresses only ERISA ESOPs cases related to the management of publicly traded stocks. However, we note that ERISA also applies to non-publicly traded shares (companies non-listed on the financial market).

[184] *Fentress v. Exxon Mobil Corp*. Case No. 4:16-CV-3484, 2019 *2019 WL* 426147 (S.D. Tex. February 04, 2019)

[185] *Fentress v. Exxon Mobil Corp*. Case No. 4:16-CV-3484, 2019 *2019 WL* 426147 (S.D. Tex. February 04, 2019)

known, the negative effect of this information was reinforced by the forthcoming disclosure about climate change's impact on carbon prices, what sent share prices plummeting and brought about loss.

Applying the US Supreme Court's precedent from *Dudenhoeffer*, the court noted that in this case of stock-drop claim based upon inside information, the plaintiffs must plausibly allege an alternative action that Exxon pension fund's managers could have taken to avoid loss. The plaintiffs proposed three possible alternative actions: (1) to issue corrective disclosures before the drop of prices, (2) to halt new Exxon-stock purchases, or (3) to invest in a low-cost risk-hedging product. The court rejected all the three proposed actions and associated arguments and ultimately determined that the plaintiffs failed to state an ERISA claim against Exxon and the trustees (fiduciaries).

With regard to the first and the second alternatives the court held that these measures would likely lower even more the stock price. As for the third alternative proposed by the plaintiffs, the court determined that insufficient facts were provided for the court to conclude on the effectiveness of the hedging product. Besides, the court was not able to state that the purchase of the hedging product would be consistent with securities laws, as any purchase of a hedging product in relation to non-public information seemed to relate to insider trading. Furthermore, the court noted that the *alleged link between climate change and* [Exxon's] *stock price*[186] was not clear from the plaintiffs' allegations, rejecting multiple arguments advanced by the plaintiffs in an attempt to plead a relation between the climate change risk, stranded assets and the drop in Exxon's stock price. Finally, the court simply noted that the plaintiffs failed to state sufficient facts that were necessary at the case's procedural posture to sustain their claim. Judge Ellison deciding on this case stated that *it may be inconsistent with ethical norms for a company to know that its business contributes to global harm and at the same time to expect to continue to profit from that business, but ERISA stock-drop claims do not provide a mechanism for relief from that inconsistency*[187]. We note that this case (being a class action) first brought to court on the 23rd of November 2016

[186] *Fentress v. Exxon Mobil Corp*. Case No. 4:16-CV-3484, 2019 *WL* 426147 (S.D. Tex. February 04, 2019)

[187] *Fentress v. Exxon Mobil Corp*. Case No. 4:16-CV-3484, 2018 WL 1561820, at **14-15 (S.D. Tex. March 30, 2018)

was dismissed in March 2018 (following the motion launched by Exxon in April 2017). Then, the second amended complaint filed by the plaintiffs was also rejected and dismissed by the court on the 4th of February 2019. The plaintiffs still have the possibility to refile the complaint; however, their decision to do so is quite uncertain[188].

Alternative action test is a basis of the ERISA ESOP stock drop cases-related pleading standard as part of the standard of proof; its role is to examine claims on the subject of the plausibility of the associated proof. It is a very powerful legal tool as it allows to definitely reject lawsuits at the very beginning of the legal affair on the basis of some initial information before plunging in the details of the case. This test is supposed to contribute to the definition of the ERISA standard of proof as well as of the ERISA liability standard that would stimulate trustees to behave in accordance with the US trust fiduciary law guaranteeing an optimal protection of pension scheme beneficiaries' interests. It seems that the question of the qualification of the effectiveness of a possible alternative action lies at the heart of the alternative action test, as an alternative action should provide a better expected outcome to be accepted but he court. It is true for all alternative investment risk management actions including those aiming to hedge an ESG risk as it is the case in *Fentress v. Exxon Mobil Corp*. case. Once a risk factor is identified by a fiduciary as material, a fiduciary is to decide on an investment risk management decision to make and an action to apply. However, the current interpretation of ERISA ESOP alternative action test by the US judicial doctrine makes this test and the corresponding burden of proof insurmountable for plaintiffs. In this context, it seems that any alternative a fiduciary might choose in the face of a material risk would have very poor chances of being objectively qualified as more effective and efficient than the choice not to manage a risk at all and, thus, to suffer passively the loss. These chances are almost inexistent in case of alternative actions aiming to mitigate or hedge an ESG risk, given unstable, early-stage and constantly moving ESG risks management techniques and approaches applied today by investors.

Would this mean that the ERISA liability standard implies that ESG risks should not be managed at all and fiduciaries' (institutional investors or here pension

[188] For the Procedural History of the Case and the related documentation see: http://climatecasechart.com/case/fentress-v-exxon-mobil-corp/?cn-reloaded=1

schemes) responsibility should not be engaged in cases of losses due to inaction against ESG risks? Does such liability standard provides incentives to the optimal investment and risk management decision-making by investors? These questions are still unanswered, what potentially exposes pension plan's beneficiaries to possible avoidable but non-avoided losses due to the limits to engagement of fiduciaries' liability implied by this *insurmountable standard of proof*[189]. None of the existing literature on the fiduciary duty subject does offer solutions to this problem. Thus, we state an urgent need for clarification on the matter and attempt to provide a first analysis of the problem via a thorough study of Exxon litigation case further in the thesis. We also formulate first recommendations for modification of the legal standard in search of the optimal pension schemes' beneficiaries' protection.

[189] *In re BP P.L.C. Securities Litig.*, 2017 WL 914995, at *3, *3 n.7 (S.D. Tex. Mar. 8, 2017).

As a result of this complex analysis of the most recent FD law developments in the US and the EU we raised two new questions that have not been examined in the current ESG FD literature. These are: (1) To what extent ESG risks could be defined as relevant or material to be considered in investors' investment risk management decision-making; and (2) To what extent ESG risks should be managed or hedged by fiduciaries to avoid their liability. These questions are fundamental for a definition of investors' fiduciary duties and their legal liability in the face of newly appearing ESG risks; we will attempt to formulate solutions to them further in this thesis.

Generally, as we could see, the process of investment risk management implies identification and assessment of material risk factors, their monitoring and control and, finally, their management – a choice of action in the face of a material ESG risk. In this context, the definition of materiality of an ESG risks factor is crucial for a correct qualification of observed risks. In its turn, consideration by an investor of all available alternatives in terms of risks management is determinative for a choice of the optimal action in the face of the identified material ESG risk. In the presence vague interpretations of *materiality* and uncertain and even deceiving incentives for a *choice of risk management decision*, the process of investment risk management would present potential deficiencies in terms of beneficiaries' protection, and, in some cases, would even affect global financial stability[190]. Thus, the concept of ESG risks materiality as well as the capacities of their management under the FD requirements must be thoroughly studied with the objective to bring clarifications on the expected efficient behaviour by fiduciaries in the face of new progressively emerging ESG risk factors under the constraints of their fiduciary duties.

Fiduciary standards play an important role in the encouraging of such behaviour by trustees both through establishing of optimal due care and loyalty principles and through guaranteeing their efficient enforcement in the court via optimally formulated liability standards. Some authors state that the history of

[190] *See* EU Action Plan for Financing Sustainable Growth, Brussels, 8.3.2018 COM(2018) 97 (final). The document is available here: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0097. *See* also Article, *EIOPA launches pension fund stress tests*, by Nick Reeve, IPE, 2nd of April 2019

ERISA *is also a study in the power that legislative words do not have over judges* (Morrison, 2011).[191] A misinterpretation or misapplication of these legal standards might produce possible anomalies leaving those whom, in the first place, fiduciary regime aimed to protect – the participants and the beneficiaries of a pension scheme – with insufficient protection. It is from this perspective that we will further analyse the concepts of *materiality* and of *choice of risk management action* in the framework of decision-making by institutional investors (namely, pension plans) under their FD obligations.

Throughout our analysis, we reconstruct the current interpretation of the tort fiduciary law applied to an average institutional investor (pension plan) and particularly the definition of *materiality* of ESG risk factors that this interpretation potentially allows (**Chapter II**). We also determine the inefficiencies of the qualification of alternative risk management actions by the judicial doctrine of the tort liability standard of the US ERISA and give recommendations on the realignment of the judicial doctrine with the ERISA fiduciary duty of prudence. By that, we specify investment risk management (hedging) actions choice that should optimally be expected from investors in the face of ESG risk factors under their fiduciary duties (**Chapter III**). For the examination of risk management actions available to a fiduciary we will study the most recent Exxon litigation case presented earlier. Thus, in this case study, we will consider specifically the US trust fiduciary law perspective, even if the conclusions of this analysis could present some implications for the European national legal systems.

Generally, we will determine clearly the place of ESG risk factors management in the current framework of investment decision-making under fiduciary duties rule, by specifying the limits and available opportunities of ESG risk management for a better protection of pension schemes beneficiaries' interests.

[191] The basis of fiduciary duty in investment in the US, Jay Youngdahl, Chapter 3, Cambridge Book of Institutional Investment and Fiduciary Duty, Cambridge University Press, 2014 (pp. 20-31): *Many claim that the American judiciary has given the law authority not intended by legislators*.

II. MATERIALITY OF ESG RISK FACTORS IN INVESTMENT DECISION-MAKING UNDER EU FIDUCIARY DUTY RULE – DEFINITION ESSAY

A clear definition of materiality of a risk factor in the domain of risk management is one of the cornerstones of a respect by institutional investors (hereafter *investors*) of their fiduciary duties (FD). By monitoring all *material*, or, otherwise saying, *important, relevant or non-negligible* risk factors, an investor attempts to provide beneficiaries with the most satisfactory results according to the agreed investment strategy. Thus, the process of qualification by investors of a risk, which their investments could be exposed to, as *material* is one of the core stages of their strategic risk management. This is true in case of financial risks. And, in the view of the new regulatory developments on the matter of sustainable finance on the European level, this could also be true for sustainability-related risks, also called Environmental, Social and Governance-related (ESG) risks. Namely, the new regulation proposal by the European Commission related to the FD of investors[192] directly implies that investors would potentially face an obligation to control for material ESG risk factors as part of their investment risk management decision-making under their Fiduciary Duties; non-material ESG risks must be neglected. We note that this is the peculiarity of the interpretation by the EU civil law of the investors' FD standard; the term of ESG risks materiality was explicitly introduced (for the first time) in the worldwide FD regulation with this EU legal proposition.

In this context, the question rises on what definition of materiality is to be applied by investors to distinguish between risks that must be mandatory

[192] Proposal for a regulation on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU)2016/2341. The text of the proposal is available here: https://ec.europa.eu/info/publications/180524-proposal-sustainable-finance_fr#risks

considered and those that could simply be ignored in their risk management and investment strategies. If, in case of traditional financial risks, the question of materiality would be intuitively linked to a potential financial impact of a risk factor on investments; in case of ESG risks, materiality can, in practice, rapidly acquire multiple definitions. Particularly, within the sustainable investment community an ESG risk factor could be viewed by investors as *material* (depending on the methodology applied) if it has a potential to affect directly and negatively investments or to influence the global financial stability or to produce an outcome in real economy. The latter example refers to the developing notion of *impact investment* on the sustainable finance market, which implies a control by investors for any positive or negative consequences (externalities) of their investments in real social and economic life[193]. The identification and the estimation of such consequences represent the main problem for the current methodologies of *impact investing*, with only few existing and highly debated solutions at the moment. Thus, it could seem at first that the most logical and easy would be to trace the negative impact of ESG risks on investment itself; but in this sphere as well, the issue of a proper estimation of ESG risks is not yet solved. All this together with the absence of a concrete definition of risks' materiality under the FD standard, complicates the task that is going to be set by the European regulator for investors, that is to consider and manage material ESG risks as part of investors' fiduciary duties.

Today, the European legal basis does not dispose of a clear apprehension of the concept of materiality neither for traditional financial risks nor for ESG risk factors. In the absence of their own definition of materiality, European regulators and practitioners turned to the international accountability standards definition that qualify materiality through the principle of relevance or of relative importance (significance) of information meaning that its omission or

[193] An example of the impact investment could be a very recent practice of calculation of the position of investments vs a global climate change scenario. In this case, based on the amount of carbon emissions attributed to their investment portfolio investors attempt to analyse versus an adopted climate change scenario what degree world (two, three, or five degrees, etc.) their investments contributes to. Then they monitor this contribution while implementing strategic changes (within the legal and economic constraints) in their investment strategies to shift the positioning of their investments in terms of associated carbon emissions to suit a more optimistic scenario (ideally less than two degrees climate change scenario).

falsification can influence the decision made by its users. First using this interpretation of materiality in the legal framework on accounting, which is the most natural transposition of this concept given that it originated from the accounting and auditing practice, the European regulator quite recently introduced the concept of materiality in the EU financial securities regulation, however without adapting it to the new field. As a result, the term *materiality* that slipped into the proposed European fiduciary duty standard for institutional investors, particularly pension schemes[194], does not have a proper definition in the context of investment risk management decision-making under the FD constraints. And today, investors, left to define materiality of ESG risks by themselves, multiply such definitions.

We see that there currently is no understanding of whether the accounting interpretation of materiality suits risk management in the context of decision-making by an investor (a fiduciary) constraint by the FD obligations, as there is no common or official understanding of what definition of materiality as relates to ESG risks is allowed by the FD standard. The objective of this research is to clarify this. We not that the question of ESG risks materiality in the context of investors' FD was not yet directly discussed in the specific ESG FD concept literature. Not only, we will for the first time explicitly reveal the difficulties of legal qualification of ESG risks and their materiality, but we also bring in new analytical tools sourced from the economic theory to enlarge and enhance the analysis of the FD legal concept of investors' decision-making. We advocate that the instruments of the economic theory of decision-making under uncertainty are particularly useful in the examination of investors behaviour under the FD rule and they allow a reconstruction of investment risk management decision-making process under the legal constraints of the FD rule. This provides a possibility to formulate an exact definition of ESG risks materiality that would be compliant with the FD law, and by that to produce a precise guidance on expected lawful investors' behaviour and the boundaries of the current legal framework in terms of ESG risks coverage. Thus, we propose here an analytical representation of materiality and provide through a theoretical

[194] *See* **Chapter I** for more information and an analysis of this regulatory proposal.

study a precise guidance on what ESG risk factors could be considered within the fiduciary duty requirements set in the EU proposal.

While analysing the concept of materiality in the framework of the accounting standards, we learn that an auditor is constraint to consider material information only. We then notice that the position that have been taken by the European legislator in the proposal on the ESG FD is quite similar and states that professional investors under their FD should *only control for material ESG risks*[195]. This legal provision would imply that the fiduciary obligations applied to investors in relation to their risk management and investment decision-making would be restricted to the consideration of material risks and, thus would depend on the definition of materiality applied. Simply saying, all material risk factors according to an accepted standard of materiality would have to be considered[196] by investors in their decision-making; and all the immaterial factors would have to be omitted, otherwise an investor commits a breach of her fiduciary duty (specifically, the duty of care[197]). And if in accounting the materiality concept has been relatively settled down through practice and long-term history of application of materiality standards (even if discussions about the appropriate materiality threshold and related bias are still quite ardent among auditing practitioners and researchers), the investment risk management is currently being challenged by this concept. This makes the precision of the definition of materiality by the EU regulator quite an imperative.

Despite the fact that the current EU legal framework do not explicitly provide a clear materiality standard, it however does contain a number of

[195] The option chosen by the EU Commission clearly stated that *material ESG risks are to be integrated within the procedures in the areas of investment strategy, risk management, asset allocation and governance, as they do for financial risks* as part of investors' fiduciary duties. *If, as a result of their assessment,* [investors] *find out that ESG factors have no material impact on the financial performance, they will not take them into account in their investment decision.* Commission Staff Working Document Impact Assessment accompanying (among others) the Proposal for a Regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 on the activities and supervision of institutions for occupational retirement provision (IORPs), Brussels, 24 May 2018, p.39. The full document is available on https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52018SC0264

[196] Here the term *considered* does not imply necessarily an active action of hedging of a risk.

[197] *See* **Chapter I** of the thesis for more details.

elements indicating what this standard could look like. We argue that the consideration of these elements allows a reconstruction of a concrete materiality standard within the FD framework with the use of basic tools of the theory of decision-making under uncertainty. Thus, we propose here an analytical representation of materiality and provide through a theoretic analysis a precise guidance on what ESG risk factors could be considered within the fiduciary duty requirements set in the EU proposal. But, first, it appears important to present the rudiments of the materiality definition that could be found in the EU formulation of the ESG FD standard.

The EU fiduciary duty of investors is understood through its core components: the duty of care (or prudence) and the duty of loyalty, which imply that investors in the role of fiduciaries are to act prudently and in the best interests of beneficiaries in accordance with agreed investment objectives and horizon[198]. From this point of view, when making an investment decision conditioned by risk factors investors are obliged to ensure that this decision is in line with the stated FD requirements[199]. Here, one of the core requirement is formulated by the fiduciary duty of care (prudence), which implies a control for all risks that could produce a *non-negligible effect* on the outcome of the investment in terms of its associated return.

Today, many investors consider that ESG risks correspond to *downside risks*, risks that can produce a negative financial outcome (loss), in the short, mid or long term (OECD, 2017). ESG risk factors are also viewed to be potentially material independently of type of an asset class, sector or company invested in within an institutional investor's portfolio[200]. The materiality of ESG risks, just like the materiality of financial risk factors, can thus be monitored on

[198] Traditional understanding of fiduciary duties transposed from the Trust regulation in Common Law (Anglo-Saxon origin). *See* **Chapter I** of the thesis for more details on the origin and nature of the FD law. The legal concept of fiduciary duties was then assimilated by the American Trust law, which formed a comprehensive framework of trust fiduciary law. Thus, today, the US interpretation of fiduciary duties predominates worldwide.

[199] *See* Formal request of EU commission to them for technical advice on potential amendments to, or introduction of, delegated acts under Directive 2009/65/EC, Directive 2009/138/EC, Directive 2011/61/EU, Directive 2014/65/EU and Directive 2016/97/EU with regard to the integration of sustainability risks and sustainability factors.

[200] Different ESG risks could be more relevant for one industry than another one, etc. *See* **Appendix 1**.

the level of an individual investment, but also and more importantly on the level of an investment portfolio as a whole. Adopting the same approach, the EU Parliament, in relation to the European Commission's ESG FD regulation proposal, has defined an ESG risk factor *as an uncertain environmental, social or governance event or condition that, if it occurs, could cause a material negative impact on the value of the investment*[201]. However, investment decisions might *cause, contribute to or be directly linked to negative, material or likely to be material, effects on sustainability factors*. In this case, investors should also consider potential impacts of an investment decision on the ESG aspects related to the global social and economic system.[202] The EU Parliament states that an ESG risk related to an investment can affect *the real economy and the global stability of the financial system and in so doing ultimately impact the risk-return of financial products*. This definition of ESG risks implies that institutional investors should focus on the negative impacts sustainability risks represent for their investment scheme (particularly, pension plan) and by that should protect the interests of the scheme members (beneficiaries). This interpretation coincides perfectly with the conventional interpretation of the FD standard, which traditionally covered the financial performance of investments only, without any consideration for impacts on society or global economy as it is (no externalities approach). These legal interpretations seem to link the materiality of ESG risk factors to their potential negative impact on financial performance of investments only. Consequently, we can assume that the EU proposal concerning the investors' FD rule currently being under development adopts an angle, according to which the ESG materiality definition is related to investments performance only. This position corresponds to the traditional

[201] Position of the European Parliament adopted at first reading on 18 April 2019 with a view to the adoption of Regulation (EU) 2019/… of the European Parliament and of the Council on sustainability-related disclosures in the financial services sector. The definition of an ESG risk proposed is: *'Sustainability risk' means an environmental, social or governance event or condition that, if it occurs, could cause an actual or a potential material negative impact on the value of the investment arising from an adverse sustainability impact*. The text is available here: http://www.europarl.europa.eu/doceo/document/TA-8-2019-0435_EN.html#def_2_1

[202] *See* the article *EU Council scraps IORP II delegated acts from green finance proposal*, by Susanna Rust, IPE, 20 December 2018: *The EU Council wants pension funds to focus on long-term sustainability risk for their members, whereas the European Parliament wants to mandate schemes to incorporate externalities in investment decisions. The latter would be a significant departure from the current understanding of fiduciary duty*.

understanding of risk factors (as it is in case of financial risks) and their management under the fiduciary duty of care (prudence) within the framework of the common modern understanding of the FD standard[203]. We thus state that ESG risk factors under the FD standard are completely assimilated to the conventional financial risks. No other specific definition of ESG risks or of their materiality is adopted to cover such unnatural for financial risks aspects of ESG as externalities for the real social and economic system and, thus, we assume that ESG risks are required under the FD to be treated similarly.

Based on this approach, the first and main indication on what ESG risk factor could be considered material appears. Identified as downside risks (risks of losses), ESG risk factors that could potentially imply losses large enough to be considered as threatening the fulfilment of investment objectives[204], i.e. deviating from investment strategy and strategic risk exposure, could be defined as material (this can be relevant in the short and in the long term). Simply saying, any ESG risk factor leading to substantial losses and, by that, to a deviation from investment performance objectives is material and, thus, must be considered by a fiduciary in the investment risk management decision-making process. To put it more precisely, the EU regulator states that ESG (non-financial) risks that *are deemed to have a financial material impact on the investment performance or valuation of a financial product / service, would need to be considered by relevant entities, ensuring adequate risk management by relevant entities and enhancing the risk-adjusted performance of their products and services, (...)*[205]. In that, consideration of sustainability risk factors in investors' decision-making is not different from the management of financial risks. We note, however, that if such materiality concept could englobe some of existing ESG risk factors, it leaves behind many principally non-financial (unmeasurable) ESG risks in the current context where the evaluation and the

[203] *See* **Chapter I** of the thesis for a more detailed analysis of FD rule in the EU and the USA.

[204] Governed by the Fiduciary Duty requirements

[205] Commission Staff Working Document Impact Assessment accompanying (among others) the Proposal for a Regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 on the activities and supervision of institutions for occupational retirement provision (IORPs), Brussels, 24 May 2018, p.39. The full document is available on https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52018SC0264

estimation of ESG risks is problematic. It also does not provide any elements to consider long-term ESG risks. Thus, the challenge of the ESG risks materiality definition is complicated by the long-term nature of many of these factors, which implies the occurrence of the outcome associated to a risk factor (loss) in the long run. And given that the EU regulator does not in their ESG FD proposal take a concrete position on this subject, the question whether a long-term aspect of ESG risks materiality could be accepted within the FD legal framework and would not contradict it stays open.

These features make ESG risk factors quite difficult to integrate within the traditional financial risks management practices by institutional investors based on daily to yearly risk control as provided by the applicable EU financial regulation[206]. Moreover, until now, the notion of long-termism was not much considered in the European investments regulation, what raises a series of questions about the efficiency of risk management, of the allocation structure and investment strategies of institutional investors targeted by the EU ESG FD proposal in the presence of long-term ESG risks. In this regulatory context, long-term ESG risks may simply drop out from under the radar of investors and of the regulator. This problem of insufficient consideration of long-term risks was first brought to the market's eyes by Mark Carney, Governor of the Bank of England, in his speech at Lloyd's of London on the 29th of September 2015. He argued that in addition to the tragedy of the commons (*open-access problem*[207]) well known by environmental economists, today, in the face of the climate change risk economic agents face another challenge – the Tragedy of the Horizon (TH) as he called it[208]. The TH implies that financial institutions, given their current organisation and internal risk management processes, are not *capable* of considering emerging long-term *mega* risks like climate change in

[206] *See* more on risk management practices by investors in the **General Introduction** to the thesis.

[207] The tragedy of the commons is a situation in a shared-resource system where individual users, acting independently according to their own self-interest, behave contrary to the common good of all users, by depleting or spoiling that resource through their collective action.

[208] Breaking the tragedy of the horizon – climate change and financial stability, Speech by Mr Mark Carney, Governor of the Bank of England & Chairman of the Financial Stability Board, Lloyd's of London, September 2015. Mark Carney gives an example of credit rating horizon (3-5 years), monetary policy horizon (2-3 years) and financial stability horizon (going maximum to the outer boundaries of the credit cycle, which represent about a decade). Thus, he claims: *Once climate change becomes a defining issue for financial stability, it may already be too late*.

their decision-making. Here, *we are typically facing a conflict between short-term risk* [management] *and the need for long-term management* [particularly, in case of institutional investors long-term savings investments management] (de Laulanié, 2003). For instance, it has been recently widely discussed among ESG risk analysis professionals that investors tend to focus on financial factors and risks with a primary aim to maximise returns in the short-term due to such reasons as *liability profile of an institutional investor, regulation requirements, time horizon or nature of the investment, governance arrangements etc.*[209]. Yet, possible future socio-economical shifts related to climate change and other ESG risks bring potentially profound implications for financial industry as well as global financial stability and economy (Krehmeyer et al., 2006)[210].

Today, with the rising concern of investors about the long-term character of some ESG risks (particularly, those related to climate change) associated to the global scientific consensus about potential drastic impacts of these risks on the economy, the question of materiality definition under the coming EU ESG FD rule must be raised for long-term ESG risk factors as well. However, this task presents some particular difficulties, as no particular consideration is given so far to long-term character of risks in the studied financial regulation. Surely, we generally find quite an impressive number of references to long-termism in

[209] EU Commission Inception Impact Assessment document, Ref. Ares(2017)5524115 - 13/11/2017. *See also* European Commission, Brussels, 8.3.2018 COM(2018) 97 final Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions, Action Plan "There are also growing concerns that the current accounting rules are not conducive to sustainable investment decision-making. In particular, the European Parliament's resolution on International Financial Reporting Standard (IFRS) 9, adopted on 6 October 2016,33 raised concerns about the impact the new accounting standard on financial instruments (IFRS 9) might have on long-term investments. The Commission recognises the importance of ensuring that accounting standards do not directly or indirectly discourage sustainable and long-term investments. In this regard, consideration is needed about whether there could be more flexibility as concerns the endorsement of IFRSs wherever specific adjustments would be more conducive to long-term investment." *See* also *Reframing Finance : new models of long-term investment management*, A. Monk, R. Sharma, D.L. Sinclair, Stanford University Press, 2017

[210] "*In hindsight, at least, it is no surprise that widespread adherence to investment practices focused on producing short-term results (…) comes with "consequences of destroying long-term value, decreasing market efficiency, reducing investment returns, and impeding efforts to strengthen corporate governance"*", Krehmeyer et al. 2006

the related legislative proposals and accompanying documents[211] as well as in some EU financial regulation already in force.[212] Still, these legal frameworks do not offer any satisfactory analysis of ESG risks materiality and of the mode of long-term ESG risks consideration as part of investors' risk management and investment decision-making.

Certainly, not all ESG risk factors will be material for all investors' portfolios. This will depend on different characteristics related to an investment strategy applied by a fiduciary (institutional investor), her market positioning (type of investment products and related investment objectives and investment horizon) and on a type of a fiduciary (investor). We note that the EU ESG FD concerns particularly one type of institutional investors – pension schemes[213]; this will be taken into consideration in the analysis. As a result, a multitude of various qualifications of ESG risk factors that could be material for different investment portfolios (their exposition to various risks depends on asset allocation among sectors (industries), capitalizations, countries, securities types, etc.) were created and applied by various market professionals.[214] In this context, even if the EU ESG FD proposal offers some general principles of ESG risk management within the investment decision-making[215], the definition of

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[211] Commission Staff Working Document Impact Assessment accompanying (among others) the Proposal for a Regulation of the European Parliament and of the Council on disclosures relating to sustainable investments and sustainability risks and amending Directive (EU) 2016/2341 on the activities and supervision of institutions for occupational retirement provision (IORPs), Brussels, 24 May 2018: *Non-financial risks that are deemed to have a financial material impact on the investment performance or valuation of a financial product/service, would need to be considered by relevant entities, ensuring adequate risk management by relevant entities and enhancing the risk-adjusted performance of their products and services, particularly over the long-term.* Also, *considering ESG factors is important for all investors because these factors could affect the long-term risk-return trade-off.*

[212] In May 2017, the revised Shareholders Rights Directive entered into force. It contains a number of transparency requirements long-term considerations integration by investors into their strategies, mandates and engagement policies, including ESG. We can also mention here: the EU Regulation (EU) 2015/760 on European long-term investment funds; Directive IORP II on the activities and supervision of institutions for occupational retirement provision in which ESG considerations were integrated in the investment process and disclosure; the EU Directive 2014/95/EU that lays down the rules on disclosure of non-financial and diversity information by large companies; etc.

[213] *See* **Chapter I** of the thesis for more information on this point.

[214] *See* **Appendix 1** for more details.

[215] Risk assessments should consider both financial and relevant sustainability risks. The valuation processes should therefore ensure a proper degree of consideration of relevant / material sustainability risks. (Formal request of EU commission to them for technical advice on potential amendments to, or introduction of, delegated

ESG risks materiality, for long-term ESG risks also[216], still needs to be formulated in a concrete way to provide investors with a clear pattern for their decision-making in compliance with their FD.

We thus attempt to provide in this research the first formal definition of materiality for ESG risk factors (**Section 1**), including long-term risk criteria (**Section 2**). For that, we use the basic tools of the theory of decision-making under uncertainty in order to reconstruct the decision-making process by an investor under the constraints of the FD legal standard of conduct. Based on this reconstruction, we develop a concrete definition of materiality for ESG risk factors and demonstrate very clearly the consideration of what ESG risks by investors is actually allowed within the current FD legal system. We thus determine the limits that the so-formulated definition of materiality imposes on ESG risks management by investors. We then identify some opportunities for the consideration of non-quantitative ESG risks by investors under the FD standard through the introduction of an extended qualitative materiality definition within the FD legal framework. We also find that some aspects of ESG risk factors, particularly long-termism (i.e. the occurrence of outcomes associated with an ESG risk in the long run), could (despite a general misbelief) be compatible with the definition of a proper investment behaviour under the current FD rule. In support to this conclusion, we thus formulate a general guidance for the consideration of material long-term ESG risks under the FD constraints.

By that, we produce the first attempt in the existing literature on the investors' FD as applied to sustainable investment to concretise the definition of materiality for ESG risk factors with the use of the tools of the economic theory.

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acts under Directive 2009/65/EC, Directive 2009/138/EC, Directive 2011/61/EU, Directive 2014/65/EU and Directive 2016/97/EU with regard to the integration of sustainability risks and sustainability factors)

[216] Once the financial materiality is linked to an ESG factor, there is no debate about the necessity to take it into account as part of a fiduciary duty. So far the court cases on breaches of fiduciary duty have been related to investors NOT taking financially material issues into consideration. There are no examples of court cases where taking material issues into consideration when making investment decisions have been contested. (European Commission Resource Efficiency and Fiduciary Duties of Investors, Final Report, ENV.F.1/ETU/2014/0002, DG Environment, 2014, page 41)

Here, we present one of the first theoretical formulations of the materiality constraints for ESG risks management by investors under the FD legal standard. The use of economic theory tools and solutions offered by the economic analysis allows us to contribute and to enrich the research on this newly appearing legal concept as *ESG FD* (Fiduciary Duties of institutional investors to consider ESG risks and opportunities in their investment and risk management decision-making for the benefit of the final beneficiaries of an investment plan).

1. GENERAL MATERIALITY STANDARD FOR ESG RISK FACTORS

As it was stated earlier based on the insights in the EU FD standard, any ESG risk factor leading to substantial losses, and by that, to a deviation from investment performance objectives is material, and should be considered by a fiduciary in the investment process. By that, ESG risk factors are assimilated to financial risks within the same investment risk management decision-making process applied by investors and governed by their FD obligations vis-à-vis investment plan's beneficiaries. As so, the FD rule serves as a concrete framework for investors' decision-making in the face of ESG risk factors; this framework determines quite concretely the constraints for such decision-making, and, consequently, for the definition of the materiality of ESG risks.

Particularly, in this context materiality could be understood through the fiduciary duty of care (prudence) as the FD rule constraints impose an investment risk management decision should be made by a Prudent Investor[217] (i.e. according to the Prudent Investor Rule) aiming to reduce risks and related potential losses by controlling for all material risk factors. Based on that, it is possible to say that a *material* ESG risk factor is associated with a *significant* financial outcome (loss). This makes a decision by an investor to manage this risk competitive in the face of the option of doing nothing given the cost of management. This formulation gives us sufficient guidance to be able to design a formal model that defines materiality of risk factors in terms of a quantitative threshold that could be applied by a prudent investor in her investment decision-making and related risk management process under the FD rule constraints.

[217] See more information on the Fiduciary Duty of prudence (care) and the Prudent Investor Rule in **Chapter I** of the thesis.

1.1. Quantitative materiality standard under the Fiduciary Duty of care (prudence)

We note that in the accounting research field, the global definition of a quantitative materiality standard, or threshold, was proposed by Byung T. Ro in 1982. Until today, this analytical representation of materiality stays the only one known and available. As the concept of materiality originated from the accounting and auditing domain and till recently was applied mostly in the specific context of accounting rules, we chose this existing model for exploring the concept of materiality in the completely new sphere of ESG risks management by investors under their FD obligations. Thus, here, we explore the analytical formulation of materiality by Ro in auditing and adopt it to the research case. To do that, first we reconstruct the constraints of the FD standard to produce a concrete framework for investors' decision-making process as it is demanded by the rule of law. Then, based on this framework we formulate a quantitative materiality (threshold) for ESG risk factors as expected under the fiduciary duty rule. By that, we finally state the materiality definition, which could be allowed by the EU ESG FD rule currently under development until 2020.

1.1.1. Materiality Threshold Formulation

First of all, based on our observations from the analysis of the FD standard legal constraints. We specify the constraints by determining the decision-making pattern of an investor incentivised by the FD rule of law. Given the fact that (as defined earlier) ESG risks seem to be assimilated to financial risks with their materiality being associated with a risk of losses for an investment portfolio, we state that the main fiduciary duty that governs their efficient management by an investor (fiduciary) is the fiduciary duty of care (prudence). It is within the constraints of this duty and the associated Prudent Investor Rule[218] that we will attempt to reconstruct the materiality definition of

[218] *See* **Chapter I** for more information on these legal concepts.

ESG risks. For that, we first define in economic (and not legal) terms what the concept of prudence would impose in terms of decision-making pattern.

Since the research by Kimball (1990), the concept of prudence is primarily seen in the decision-making theory as being related to a precautionary saving choice in opposition to the concept of risk aversion that, in its turn, is understood as a degree of preference towards risk (uncertainty). Some authors, for example Crainich & Eeckhoudt (2005), showed that prudence can also be interpreted as an attitude towards risk, for example, when it is seen from an angle of a preference for decomposition of losses. They, thus, attempted to generalise the concept of prudence by extending it beyond precautionary saving towards insurance decisions. Other interpretations of prudence like an aversion to downside risk[219] and others were discussed by Menezes et al. (1980), Eeckhoudt et al. (1996), etc. Consequently, the optimal payoff for a prudent investor in decision-making problems is sometimes presented as the one that *always has less downside risk than any other* (Bertrand & Prigent, 2010). At the same time, taken in the context of the legal Fiduciary Duty Standard and the associated Prudent Investor Rule, the concept of prudence is viewed much more through the prism of rationality and risk-aversion that precautionary savings. This interpretation is supported further through the reliance of the modern FD standard on the principles of the Modern Portfolio Theory (MPT), which was discussed in the **General Introduction** to this thesis. In its turn, the MPT at the basis of the FD Prudent Person Rule provides us with a quite concrete framework of decision-making under uncertainty – expected utility representation of rational choice provided by the classical economic decision theory. Considering that the investment and risk management decision under this theory in alignment with the MPT is reflected in the modern interpretation of the investors' FD of care (prudence), we conclude that the FD Prudent Investor is risk-averse. Thus, we argue that within the FD standard (as it is conceptualised in the EU ESG FD proposal), an investor is qualified as an average rational and risk-averse (i.e. prudent) decision-maker that operates within the general framework of decision-making under uncertainty in the

[219] A preference for a downside risk reduction coupled with a risk increase of the same value in a zone of better results.

context of investment risk management. For example, for risk management by a pension scheme, the Prudent Investor Rule would mean that such investor should manage a pension fund as a rational and risk-averse decision-maker, by controlling for the overall risk exposure of the fund as well as its associated overall performance (the control on the portfolio level is one of the constraints of the MPT). Such representation of the FD constraints for decision-making by an investor is characteristic for the interpretation of the FD both in Europe and in the United States (Schanzenbach & Sitkoff, 2015)[220]. Thus, in this research an investment behaviour (decision) of a fiduciary is considered prudent when it is rational and risk-averse. This interpretation allows us to determine the type of decision-making problem that we will use here to state a definition of ESG risk factors' materiality and its formulation using the tools of the theory of decision-making under uncertainty. We now can specify that a fiduciary under the FD of care (prudence) is a rational expected utility maximiser, who chooses an optimal decision rule in the context of risk management decision-making under uncertainty. This predetermines the form and the shape of the expected utility function we will use here further for the materiality definition.

In order to model the definition of ESG risks materiality we consider the following decision-making problem: a prudent investor (as interpreted under the Prudent Investor Rule), who manages a pension scheme, faces an ESG risk in her investment risk management. We precise once again that an ESG risk here represents a piece of information about an expected loss (exposure) for an investment portfolio. To make a decision in the face of this risk she must first identify whether this risk is material, as according to the EU ESG FD rule only material risks should be managed. Trying to answer this question, the investor compares two most simple mutually exclusive decision-making options: to omit this information (ESG risk) and to continue managing the fund without any changes but with an exposure to the risk (Basic option); or, to consider the identified ESG risk factor and manage the fund accordingly (Alternative

[220] *See* the **General Introduction** for more information on this point. The last US fiduciary duty rule reform under ERISA explicitly reoriented fiduciary investment from risk avoidance towards *risk management in accordance with modern portfolio theory. The rule directs trustees to implement an overall investment strategy having risk and return objectives reasonably suited to the trust*. *See* Schanzenbach and Sitkoff, 2015.

option). Under these circumstances, it appears that the materiality of the identified risk factor could be defined through the comparison of these two available basic options. In this case, the question that we aim to answer through such comparison would be: what should be the impact of the risk factor on investments to make it imperative for our investor to consider it in the risk management process? Remember that the materiality is to be measured on the investment portfolio level, i.e. how a risk factor affects the overall performance of the fund. Our fiduciary is an archetype of the Prudent Investor as expected by the FD rule of law; by modelling her decision-making process, we show what behaviour by investors and what risks materiality definition would be expected under the coming EU ESG FD standard.

To answer the formulated question we use Ro's model (B. T. Ro, 1982) and adapt his setting to our decision-making problem. As in Ro's formulation, our example also represents a simplified situation, in which there is only one piece of information (one ESG risk factor) and one information user (one investor) who has given tastes and beliefs (constraint by the FD Prudent Investor Rule). At this stage, we adapt the Ro's setting to our concrete decision-making problem, by first of all considering only one piece of information with only one value possible (that could be material or not). This contrasts with the Ro's global formulation of materiality based on the existence of many possible values for a piece of information some of them being material and others not. We also will consider in our decision-making problem the cost associated with an ESG risk factors consideration by an investor, which is not considered by Ro, as we will look for a materiality definition that could be applicable as a rule of decision-making within the framework of the FD law, which implies efficiency. We will then enlarge the scope of Ro's model by introducing long-term; this will be done in **Section 2** of this **Chapter II**.

Given that, we now proceed to the definition of the quantitative materiality standard (threshold) for a given ESG risk factor considering the cost of ESG risk information and of its integration based on a model of decision-making by a so-called archetype of a prudent investor (according to the Prudent Investor Rule). As it was stated, in this case, the materiality of an ESG risk factor would emerge from a comparison by our investor of the two available

options of choice (the Basic – *Do Nothing* option and the Alternative, let us call it for simplicity *Hedge* option). We can now formulate the setting of the decision-making problem.

The investor faces a decision problem that can be described by means of the state set *S* (possible final value of the overall fund's risk-adjusted performance), the action set *A* (possible actions by our investor with or without considering the identified ESG risk factor) and the probability function *p(s)*, all finite and continuous. An outcome $x \in X$ (the finite outcome space) of an action $a \in A$ that Exxon can take is determined by the payoff function $x(s, a)$ where $s \in S$ is an uncertain future state. *x* represents expected loss, i.e. a potential deterioration of the fund's performance. As the future state (*s*) is uncertain, the associated outcome (*x*) of an action choice (*a*) is also uncertain. We consider that the investor can assess the magnitude of the considered ESG risk factor, and by that, the total exposure of the fund to this ESG risk is foreseeable and is represented by *y*. Thus, for simplicity, we assume that for a given ESG risk factor *y* is a constant variable known to the investor. When *y* is considered by the investor, her decision analysis and choice of action are conditioned by it. Thus, our investor can anticipate a potential outcome *x* (in terms of expected losses) of their action *a* (risk management action) given *y*. In this case, the choice of an action depends on the value of *y*; the decision rule is, thus, a function *a(y)*. As a result, information in *y* can affect the determination of $x \in X$ through its effect on either $s \in S$ or $a \in A$ (or both). We also consider *w*, which represent the total cost of the consideration of the identified ESG risk factor and of the associated hedging action, when the ESG risk is considered and managed by the investor. For simplicity, we define *w* as constant and known by the investor[221]. Naturally, our investor considers all available rules of action in search of the best action to take within each of the two available options: the basic one (Do Nothing) and the alternative one (Hedge). At this stage, to be able

[221] In many cases, the cost can be predicted and provisioned by investors as ESG risks control tactics are based first of all on the purchasing of ESG data, research and metrics (to be able to estimate the exposure) and financing of ESG analysts teams. The cost of hedging tactics (purchasing of financial hedging products, divestment tactics from risk-exposed companies, dialogue with exposed companies with an attempt to incentivise them to adopt a better strategy, etc.) are also often internalised by investors. Thus, these elements can be estimated by investors.

to concentrate our attention on the definition of materiality, we consider that the hedging action (alternative option), if applied, is 100% effective and presents no side effects (no losses associated with the action itself).

In this context of choice between the two options, it is possible to present completely our investor's preferences over decision outcomes by the utility function $U(x)$[222]. The utility function would be a classical von Neumann-Morgenstern function with its shape characterising a decision-maker's attitude towards uncertainty regarding the outcome. Here, we keep the assumption that a FD compliant investor is risk-averse, thus, the shape of her utility function is concave. By that, our investor is a rational expected utility maximiser in choosing an optimal decision rule. Our fiduciary evaluates the outcomes of the two given options available to her and, by comparing them determines a potential value (in terms of avoided loss) procured by the consideration of the ESG risk factor in her risk management process given its cost. If this value is *substantially* high, the risk factor will be qualified *material* and our investor will be constrained by her fiduciary duty to consider this risk in the risk management process.

To illustrate this decision process and to express materiality definition through it, we, first, formulate the outcome of the basic option not allowing for the ESG risk consideration. Here, our investor would choose the optimal action that yields the maximum expected utility without any consideration for the ESG factor. As the investor does not manage the identified ESG risk factor, the expected outcome (x) would incorporate the total expected loss associated with the exposure of the fund to the identified ESG risk (y).

$$Eu(x^*) = max \int_s U(x(s, a))\, dp(s)$$

Similarly, if our investor considers the ESG risk factor and includes its management into her decision-making, she would choose the optimal decision rule:

[222] "*U(x) is a real-valued, differentiable function with domain X and is concave, nonnegative, monotonically increasing, bounded and unique up to a linear transformation*", Ro (1982). We keep the integrity of the assumptions describing the decision setting proposed by Ro.

$$Eu(x^*/y) = max \int_s U(x(s, a(y))) \, dp(s/y) - U(w)$$

In this case, an optimal hedging action in the face of an ESG risk factor could offer an expected outcome that would be better in terms of associated loss (some loss can be avoided) than the outcome of the basic option. Consequently, the value of the ESG risk factor consideration in the investor's decision-making is given by the difference between the investor's expected utilities associated with the two available options. If this delta value is positive (>0), the ESG risk factor could be qualified as *relevant* for the risk management and investment decision analysis under the FD rule. We consider that any factor, the integration of which into the investment risk management decision-making process produces a delta value ≥ 0, is relevant for the decision-making. Therefore, the relevance of a risk factor can be expressed as:

$R(y) = Eu(x^*/y) - Eu(x^*) \geq 0$, it can then be said that

$R(y) = Eu(x^*/y) - Eu(x^*) \geq U(w)$, or otherwise expressed as

$R(y) \geq U(w)$

$R(y)$ is an uncertain value coming from the difference between the two expected utilities. This value equals to the amount of *avoided loss* that could be generated by the consideration of an ESG risk factor in the investment risk management decision-making process through a risk hedging action by an investor. As a result, all risk factors, that offer some amount of avoided loss but whose payoff is not sufficient to cover the cost of hedging, are not considered by a rational investor[223]. All the other factors are qualified as relevant; however, not all of them are material. To be qualified as *material*, a risk factor should provide a level of relevance (in terms of the expected magnitude of avoided losses) that is *substantially high*. More precisely, the alternative action based on the ESG risk consideration must provide an outcome substantially better than the outcome associated with the basic option given the total costs of such consideration. For instance, B. T. Ro (1982) defines this substantial level of

[223] Ro (1982) about the cost of information in his model: *Alternatively, one may interpret the outcome x = x (s,a) as the "net" outcome reflecting the cost of information, assuming that the net payoff function has the same properties as those of the gross payoff function*.

benefit procured by the alternative option in the opposition to the basic option by the variable *k* expressed in units of utility. Therefore, the materiality (*M*) standard expressed through the concept of relevance would correspond to the following formulation:

R(y) > U(w) at least by *k*,

where *k* is the minimum threshold[224]expressed as one unit of utility.

More precisely, the materiality threshold (*M*) can be presented as:

$M(y) \geq U(w) + k$

Consequently, it is now possible to formulate the definition of the materiality threshold (or the quantitative standard of materiality).

Definition 1. *The materiality threshold represents a minimum acceptable by an investor substantial surplus in terms of expected avoided loss generated by the integration of an ESG risk factor into the risk management framework within the investment decision-making given the cost of this integration.*

In our example, if the value resulted from a comparison between the two available options and expressed in terms of avoided loss procured by the ESG risk factor consideration is substantially high (*k*), the ESG risk factor will be qualified *material* and the Prudent Investor, as a fiduciary, will have to consider it in her investment risk management. Otherwise saying, if, by hedging of an ESG risk factor, our investor could avoid a substantial magnitude of loss in comparison to the Do Nothing option given the cost of hedging, this ESG risk would be qualified *material* and the investor would be constrained by her fiduciary duty to consider this risk factor in the investment risk management process.

[224] Ro (1982) about the value of "*k*": *Such that an increase in expected utility conditional upon y by less than k is not worthwhile for an investor to consider the item in his decision analysis*.

1.1.2. Materiality Threshold and Acceptable Loss

The materiality threshold *k* represents a point at which a rational and prudent investor (under the FD constraints) has no choice but to integrate a risk factor in the investment risk management decision-making. Generally, it is assumed that an investor is expected to choose *Eu(x*/y)* over *Eu(x*)* if the first one is strictly bigger than the second one without considering the value of this difference. However, the concept of materiality implies that this condition alone would be insufficient to make an investor choose the alternative option. The materiality standard states that an investor will always strictly prefer *Eu(x*/y)* to *Eu(x*)* if and only if the difference between them in terms of expected avoided loss reaches a substantial level (represented by *k*); meaning that an alternative option must be *clearly* beneficial. If not, an investor might still go for *Eu(x*)* even when *Eu(x*/y)* is offering a slightly better outcome. In this context, what would be the substantial level (*k*) of the difference (Δ) between the two options that would make an alternative option clearly more beneficial?

Hypothetically, as, under the materiality standard an investor chooses to lose by preferring the basic option to the alternative one when the latter is only slightly better, *k* might be expressed through the concept of a loss tolerance threshold, i.e. the maximum amount or magnitude of loss tolerated by an investor[225]. In spite of some conceptual difficulties, one of the most evident and intuitive approaches to acceptable loss definition is the one based upon order of magnitude (and materiality is a matter of magnitude). As in case of materiality definition, some losses that could actually be efficiently avoided are still accepted by an investor until they reach substantial threshold magnitude *k*, this

[225] *See* for instance in the domain of risk, J. D. Whittaker, Evaluation of Acceptable Risk, *The Journal of the Operational Research Society*, Vol. 37, No. 6, 1986, pp.541-547: *This approach states that if one's risk of dying at a given age is, say, one in ten thousand (0.0001), then to increase it by some small amount, say one in one million (0.000001), gives a resulting risk of (0.000101) a change so small that even the hypersensitive would not be concerned.* Also, the idea of not increasing lifetime risk by more than one in a million has become commonplace in public health policy, as it provides a numerical basis for establishing a negligible increase in risk. Following this logic, in the environmental decision-making low risk criteria provide some protection for cases where individuals may be exposed to multiple chemicals e.g. pollutants, food additives or other chemicals. The same logic can be applicable to losses and loss tolerance concepts.

materiality threshold determines the maximum value of such tolerated losses in relation to the total risk exposure of a fund.

Considering that within the current risk management practices by institutional investors, it is possible to define the threshold of tolerated loss as a maximum expected magnitude of risk-related loss that is not susceptible to provoke a substantial change in the overall risk exposure profile of the fund. More precisely, the value of *k* in the materiality threshold could be seen as the level under which all magnitudes of expected avoided loss can be neglected by an investor without risking that it would provoke a change in the total risk exposure of investments, namely their Value-at-Risk[226]. Simply saying, the magnitude of losses that is less than *k* would be seen as too small to affect the Value-at-Risk of the fund and, thus, would be tolerated and absorbed. As a result, the option to avoid such losses by hedging the corresponding risk would be ignored by the investor. The investor would choose to do nothing (basic option) and the identified ESG risk factor would be considered immaterial.

Definition 2. *The value of k will correspond to the minimum expected magnitude of losses associated with an ESG risk factor that will be sufficient to induce a change in investments current overall Value-at-Risk exposure*[227].

Consequently, all the values equal or superior of *k* will be significant enough to contribute and modify, i.e. increase the total downside risk exposure and, thus, will require obligatory hedging measures. All the values of expected losses inferior of *k* will be tolerated.

The definition of the materiality standard applied here is quite general, not specifically restricted to ESG risks and, thus, is susceptible to be applied to financial risks too. However, many ESG risks do possess some particular features that could invite to specific considerations to be introduced in the materiality definition. One of such particular features of ESG risk factors – the long-term character of the associated outcomes (losses), will be explicitly

[226] Or risk-adjusted performance level, downside risk level, total volatility, etc.

[227] In other words, the definition of *k* will allow an investor while assessing the cumulative risk-return trade-off of all positions on a portfolio level, given a risk factor (*y*), to see if the risk levels are too high with the existing mix of holdings to achieve long-term return objectives.

discussed further. On the other hand, we note that today due to various reasons very few ESG risk factors would satisfy a materiality standard based on the formulated quantitative threshold. We will now consider those ESG risk factors that could not be measured and associated with a concrete expected loss magnitude and, thus could not be assessed and qualified as *material* according to the formulated quantitative materiality standard (i.e. threshold).

1.2. Suggestion of Qualitative Materiality Standard for ESG risks

Today, there are difficulties related to measurement of many of ESG risk factors. In some cases, they are even considered as unquantifiable being assimilated to intangibles. Despite nascent technological and methodological solutions by different investment professionals, who seek to assess the material impact of ESG risk factors on investments, their input in terms of quantification of sustainability risks is quite limited and vary largely from one investment professional to another. In this context, it is difficult to assume that ESG risk factors would satisfy the quantitative materiality threshold as defined previously. These problematics related to the assessment and, particularly, to the measurability of ESG information is connected directly to the particular nature and characteristics of these risks, namely their uncertain magnitude[228] and probability[229] as well as their uncharacteristic for current investment risk management practices timing of occurrence[230]. Seen within the framework of a

[228] Generally, there is a high uncertainty about the magnitude of a risk factor, i.e. its potential outcome value for an investment portfolio. Exposure to some risks, like carbon emissions and energy transition risks, including stranded assets can sometimes be calculated, however with an extremely high uncertainty in the estimations.

[229] The actual probability distribution of an ESG risk is sometimes questioned. Thus, many authors call for ambiguity consideration in analyses of sustainability risks. We do not explicitly study this question here, however, we check the impact of introduction of ambiguity concerns into our model of materiality threshold definition and arrive to a conclusion that ambiguity does not change the definition of materiality or the decision-making framework. For the detailed analysis of this issue, see **Appendix 3**.

[230] We already discussed the question of current short-term orientation of financial decision-making in the **General Introduction** of this thesis. ESG risk factors could represent at the same time some potential short-, medium- and long-term effects on investments, which are difficult to manage within the

quantitative materiality, a risk factor should be identifiable, measurable and of substantial importance to be considered material. Given the stated measurability issues as well as high degree of uncertainty (in the absence of necessary data) associated with ESG risk factors, it seems that there is a need for extension of the materiality definition towards its potential qualitative representation.

1.2.1. Difficulties in ESG risk factors' assessment

As it was stated earlier, the measurability of ESG risk factors represents a true challenge today. These new types of risks unknown for the conventional financial analysis and investment risk management frameworks and presented (in most cases) in the form of qualitative characteristics of investments struggle to find their way in the investment decision-making process by investors under their FD decision-making constraints. Despite a strong intuition that these risk factors could be actually quite material for investment risk management decisions[231], their consideration still does not represent a general practice on the market being reserved to more advanced and already initiated industry actors. This is due to the fact, that many market practitioners do not consider the management of such highly uncertain and difficultly measurable risk factors to be compliant with the fiduciary duties of investors in terms of prudent investment management. The lack of measurability of many of ESG risk factors and, particularly, of their associated outcomes in terms of potential losses is related to an insufficient quality and quantity of the currently available ESG data as well as to scarce and quite early-stage methodologies related to ESG risks' assessment and management.

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current risk management frameworks. Moreover, uncertainty about the timing of an ESG risk occurrence complicates much its analysis and integration into investment decision-making.

[231] Many investors consider these factors as an additional source of information that brings light on the true value (*fair value*) of an investment opportunity. Also, climate change-related and energy transition related risks are more and more accepted by industry professionals and financial regulators as relevant and material for the functioning of financial markets. *See* new Report, *A call for action: Climate Change as a source of financial risk*, by the Central Banks and Supervisors Network for Greening the Financial System, April 2019. The full text is available here: https://www.banque-france.fr/sites/default/files/media/2019/04/17/ngfs_first_comprehensive_report_-_17042019_0.pdf

Talking about the quality of ESG data as available today, we note that despite numerous recent regulatory and soft law industry measures aimed to enhance ESG data production through non-financial sustainability corporate disclosure[232] and disclosure by investors[233], the disclosed data is now too insufficient and inconsistent to allow formulating quantitative measures for the majority of sustainability risk factors. Besides, being aware of the problematics related to the quality and the quantity of available ESG data, such initiatives in order not to scare off the production of the data, provide only a general guidance on sustainability disclosure without specifying methods or metrics to be used by corporates or investors. Today, ESG data remains incomplete and almost incomparable across companies, sectors and countries and different financial industry actors use various ESG information in attempting to assess ESG risk factors and their impact on investment performance in the absence of data and common standardised methodologies[234]. Besides, it is important to note that the great majority of the available sustainability data comes from corporate disclosure by companies, which sometimes makes it questionable[235]. Consequently, in the majority of cases, ESG risks consideration by investors takes form of a qualitative analysis added to the conventional financial indicators as an additional layer of information. As a result, in most cases, the materiality of ESG factors for investment opportunities is presented separately

[232] We can state here such initiatives as Global Reporting Standards, Integrated Reporting Initiative, inclusion of ESG information disclosure requirements in the financial accounting standards and creation of the Sustainability Accounting Standards Board (SASB) and of the Climate Disclosure Standards Board (CDSB), etc., and development of dedicated ESG risks research by various specialised agencies. Also, such regulatory initiatives as the EU Directive 2014/95/EU for non-financial disclosure, etc.

[233] The UN Principles for Responsible Investment (PRI), The International Financial Stability Board's Task Force on Climate-related Financial Disclosure (FSB TCFD) framework, the upcoming EU Sustainable Finance regulation, etc.

[234] Investors' Governance and ESG integration assets that the lack of standardised data and risk metrics brings a lot of uncertainty in the application of ESG factors and hinder ESG integration by investors. As an example of this problematics, they state that *carbon footprint can be measured as a multiple of revenues or of assets. And it is very hard to measure Scope 3 carbon emissions which are probably the most important sources of carbon risk for non-resource intensive industries.* (OECD, 2017)

[235] Among the flaws in corporate climate reporting identified by 2Degrees Investing Initiative we find: permission by Carbon Accounting Standards to use different methodologies, which are eventually hard to compare from one company to another; variable quality and timeliness of data; absence of a benchmark to allow comparison by data users of the ESG information, etc.

in a so-called *materiality matrix*, which results in the attribution of an ESG score to an investment opportunity[236].

According to the OECD Report (2018), data availability represents currently one of the main technical limitations for better ESG incorporation in investment decision-making frameworks; another one is related to methodological issues[237]. Thus, the current understanding as well as treatment capacities of ESG data by investors are limited. To define which metrics should be applied in each investment case is difficult; and it is even more difficult to guarantee their accuracy and efficiency. Besides, ESG risk factors are difficultly workable within conventional financial models as we already saw earlier in the General Introduction to the thesis. Then, if we are talking about the application of such metrics in the investment and risk management decision-making process in terms of ESG risk-specific management techniques being developed on the market (divestment, engagement or consideration of ESG risk factors in investment valuation, etc.)[238], we face the same questions of the potential efficiency and effectiveness of such methods applied by investors.

In this context, we see that it is quite difficult for investment professionals to introduce ESG risk factors into the conventional quantitative materiality framework within the investment risk management decision-making

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[236] *A number of the institutional investors interviewed cautioned that ESG analysis could be less well respected by portfolio managers than financial analysis because it was not quantitative and that it was therefore harder to convince them to take it into account. This was true even when ESG analysts were part of the generalist portfolio management team*. (OECD, 2017)

[237] OECD Integrating Climate Change-related Factors in Institutional Investment, Background paper for the 36th Round Table on Sustainable Development 8-9 February 2018 by G. Ang and H. Copeland: *Outstanding gaps remain, however, to encourage forward - looking scenario analysis or to improve data quality, metrics and harmonisation, while recognising specific national circumstances*. *Challenges with scenario analysis include: allocating macro-level impacts to micro-level actors; creating sector-specific scenarios; creating country-specific scenarios; covering a large scope of carbon-intensive or climate-intensive sectors, where data and modelling may not always be available; and addressing adaptive capacity and scenario gaps, especially since there is no one-size-fits-all within each country or sector*. *See* also Carbon Tracker Initiative (2017), CICERO (2018), 2° Investing Initiative (2017).

[238] Divestment can represent a particular practice of exclusion by investors of companies or whole sectors from investment portfolios and general universe of investable companies. Engagement represents another tactics of dialogue with a company, which is exposed to an ESG risk, with the objective to specify its exposure and to assess its capacities to cope with it. Among possible valuation techniques, there are: adjustment of the discount rate applied to future corporate cash flows; application of higher or lower multiples to valuation ratios such as Price/Earnings or Book Value.

process. Today, it seems almost impossible to isolate, to measure and to trace an expected outcome of a particular ESG risk factor on an investment performance in order to analyse it in comparison to any numeral threshold as required under the quantitative definition of materiality within the FD constraints. Thus, we advocate for the need to adopt a qualitative materiality standard in case of ESG risk factors management by fiduciaries.

1.2.2. Proposition for Consideration of the Qualitative Definition of Materiality for ESG risk factors under the FD standard

Given the so-stated problematics in the assessment of ESG risks and in their integration within conventional financial risk management models and, at the same time a strong intuition and imperatives for consideration of sustainability and climate change-related risks as material in the context of investment management, we turn our attention towards the concept of *qualitative materiality*.

The notion of qualitative materiality exists already in the traditional financial accounting and auditing standards[239]. Such qualitative factors as for instance the *specific circumstances* for the company are allowed and explicitly qualified as *material* by the International Federation of Accountants (IFAC) throughout their accountability standards. We remind here that these standards are used by the European Community and largely around the world. In the US, the principle of qualitative materiality represents an integrated part of the provisions of the accounting regulation. Namely, this concept appears explicitly in the currently applicable Staff Accounting Bulletin (SAB) No.99 (1999) issued by the US Securities and Exchange Committee (SEC)[240]. The Bulletin states both quantitative and qualitative materiality standards. More precisely, it lists a number of quite concrete qualitative factors that should be considered by

[239] Remember that as we explained earlier the concept of materiality in general originated in the Auditing and the Accounting practices and regulation and, now, it is progressively entering securities regulation around the world, including the EU financial regulation.

[240] *See* US Securities and Exchange Commission 17 CFR Part 211 [Release No. SAB 99] Staff Accounting Bulletin No. 99.

the auditing industry professionals in the definition of materiality of a piece of accounting information. Among such qualitative materiality indicators as relates to the accounting examination of a company, there are: consideration of failure by a company to meet analysts' consensus expectations for the enterprise; significant positive or negative market reaction[241], etc. According to Park (2009), who analysed thoroughly the US Generally Accepted Accounting Principles (GAAP)[242], the qualitative and the quantitative materiality standards target two different problems in the auditing practice. If the *quantitative test prohibits large misstatements that may distort the fundamental value of a company*, the *qualitative test prohibits unjust enrichment by individuals who might benefit from market fluctuations caused by manipulations*. *Both standards might be deployed as a way of determining when a company should be vicariously liable for a financial misstatement* (Park, 2009).[243]

The same approach to materiality could be traced in the securities regulation, which, as we stated earlier, borrows largely this concept from auditing and accounting. For instance, the European Securities and Markets Authority (ESMA) refers to the Article 16(1) subparagraph 3 of the EU Prospectus Regulation[244] related to risk factors consideration and states that where quantitative information on a potential negative impact of a risk factor on the issuer or the securities is not available may be described using a qualitative approach (ESMA, 2018). Generally, we can state a tendency in the financial regulation and analysis towards a growing acceptance of the consideration of both quantitative and qualitative materiality interpretations of risk-related

[241] A volatility of the price of a registrant's (a company's) securities in response to certain types of disclosures may provide guidance as to whether investors regard quantitatively small misstatements as material.

[242] The GAAP represent the accounting standard adopted by the US Securities and Exchange Commission (SEC).

[243] O. Tomo (2011) concludes through his study and provides evidence stating that conventional financial factors are insufficient for a complete understanding of companies' value, as physical and financial assets reflected on companies' balance sheets represent around 20 percent of their value. The author shows that 80 percent of companies' value is determined by intangible assets assessed based on both financial and non-financial and often qualitative data.

[244] Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EU

information. However, we still note that *quantitatively material risks* dominate and many financial professionals do not pay much attention to qualitative information and risk factors. This is even more true in case of sustainability or ESG risk factors, which, given the stated problematics related to feasibility of their assessment, are if not neglected totally, are still viewed as secondary information that in cases of good financial performance characteristics of a company could be omitted and neglected.

We argue that this problematics should be considered in the development of the ESG integration frameworks by the financial industry as well as by the regulatory authorities, as for instance in case of the EU Sustainable Finance regulation. Therefore, we advocate for the extension of the definition of materiality towards inclusion of its qualitative interpretation with the objective of a proper integration of ESG risk factors into the investment and risk management decision-making process by institutional investors. We note that such formulation could rely (to some extent) on the principles and provisions set in auditing. Particularly, we retain a *potential to evoke market reaction* and a *qualification by an experts' consensus*[245] as potential criteria for an ESG risk factor to be considered as *material* under the qualitative definition of materiality. Based on this, we propose the following definition of the qualitative materiality as applied to ESG risk factors.

Definition 3. *An ESG risk factor is considered material if it evokes a universal market reaction or if it is viewed by a universal expert's consensus as being associated with a substantial surplus in terms of expected avoided loss in case of its consideration by an investor within the investment risk management decision-making process, given the cost of its consideration.*

We note that such extension of materiality definition to cover relevant qualitative aspects of ESG risk factors is not prohibited by the trust fiduciary law provisions neither in Europe nor in the US regulation. Moreover, with the integration of materiality concept in the European Commission's proposal on investors' ESG FD and ESG risks disclosure, the choice by a fiduciary of ESG risks to consider is directly governed by the interpretation and the final

[245] As stated earlier, both are allowed under the US auditing regulation (namely, (SAB) No.99).

definition of materiality designed by the regulator within this upcoming rule of law. Therefore, an explicit specification of the concept of materiality allowing its extension (as it is the case in the auditing regulation particularly in the US) towards qualitative assessment and representation of ESG risks would not only be in compliance with the investors' fiduciary duties, but would allow proper and efficient consideration of qualitatively material ESG risks in their decision-making process. Many social and environmental issues can be considered potentially material to all investors (Lydenberg, 2012) as they represent the so-called potentially systemic risks that could affect the whole global social and economic system and through that impact a fiduciary's investments. Reached through an expert consensus or with the consideration of market's reaction, the materiality definition of ESG risk factors is not disconnected from traditionally material financial information. Here, a qualitative materiality standard would allow to discover and control for the factors that are not quantitatively material but still can have a significant impact on the definition of financial performance and value of investments[246]. As so, qualitative ESG factors are perfectly compliant and usable within the investment risk management decision-making process by investors under the constraints of the FD standard. The qualitative materiality definition could also represent a valid answer to the problematics related to the consideration by investors of long-term sustainability risk factors. However, when it comes to the quantitative assessment of risks as material within the long-term timeframe of their outcomes, we note that the FD legal frameworks presents some other unexpected solutions that we will discuss further.

[246] *Therefore, we argue that the main difference between the two typologies of reporting (financial and non-financial) is the different nature of the information disclosed rather than the different aims (…) of the report*. (Mio & Fasan, 2013)

2. MATERIALITY OF LONG-TERM ESG RISKS

In the current context, the importance to treat long-term ESG risk factors, particularly those related to climate change is largely accepted across the responsible investment (RI) market. And this, despite the fact that such task presents some particular difficulties. For instance, if there is a growing international consensus that the risks of climate change are unequivocal, their consequences in terms of potential concrete losses are not only highly uncertain[247], but also lie too far in the future for the traditional operational time frames of investors. And one of the main issues influencing the time frames of economic agents is the ubiquitous practice of discounting of future outcomes. In case of quantitative materiality, to be considered material a risk factor should be identifiable, measurable and of substantial importance. In this context, and given the discounting applied to future outcomes associated with long-term ESG risk factors based on the present time preference postulate, the integration of these factors into decision-making on the basis of the general materiality standard seems quite constrained. Mark Carney in his famous speech stated that *by managing what gets measurable we will break the Tragedy of the Horizon*[248]. However, not all measured will, eventually, be managed, and this is the question of materiality. Thus, we further focus on the intertemporal character of decision-making and attempt to explore the materiality standard as it could be applied to long-term ESG risk factors.

Generally, discounting of the future in relation to the present can be qualified as a fundamental principle in economics and finance. The principle of time value of money implies that one dollar today evokes a higher utility than one dollar tomorrow. This concept poses a condition of positive time preference on economic agent behaviour and decision-making. Such attitude is, then, captured in the utility function via a discount factor (β). Despite arguments

[247] For instance and particularly in case of insurance the attribution of increases in claims to specific factors is quite complex.

[248] Breaking the tragedy of the horizon – climate change and financial stability, Speech by Mr Mark Carney, Governor of the Bank of England & Chairman of the Financial Stability Board, Lloyd's of London, September 2015.

about possible interpretations of β[249], the general idea is that all other things being equal, the agent focuses on her well-being in the present as opposed to the future ($0 < \beta < 1$)[250]. The higher the time preference (i.e. the lower the value of β), the higher the discount placed on outcomes perceivable in the future. Since in many spheres of economic activities, most decisions have delayed outcomes (x), decision-makers are commonly and constantly exposed to discounting problems.

On the other hand, given the fact that the existence of discounting has no scientific explanation and based on an intuitive approach, different authors at different times tried to analyse and explain the phenomenon of intertemporal choice[251]. Some argued that future utility should not be discounted at all (Rawls 1971, Solow 1974 and others) or provided various critics to the existence of the concept of positive present time preference (Ramsey 1928, Pigou 1932, Harrod 1948, etc.). Others tried to find an alternative explanation to describe agents' attitude towards the future (Gabaix & Laibson 2017)[252]. However, after the preference axiomatization for discounted utility, which models intertemporal choice, having been provided by Koopmans (1960), many agreed on a positive time preference as an expression of natural tastes of economic agents – the so-called *pure present time preference*. Today, we can say that there exists a consensus among economists on a fundamental role of discounting in an economic agent's forward-looking decision-making. Thus, today, utility maximization across decision-making domains involves consistent application of temporal discounting. The concept of positive time preference lies in the heart of economic decision-making and dictates most of economic activities, by allowing (inter alia) the existence of interest rates across economies. Coming

[249] β can also be explained as a degree an agent's impatience or a degree of an agent's myopia.

[250] For instance, Olson and Bailey (1981) arrive to a conclusion that *the case for positive time preference is absolutely compelling, unless there is an infinite time horizon with the expectation of unending technological advance combined with what we call "drastically diminishing marginal utility*.

[251] *See* Choice over Time by George, Loewenstein, 1992 for more insights on possible explanations. *See also* Creedy & Guest (2008) on Existence of Time Preference.

[252] The authors argued that that behaviour arising from imperfect foresight (noisy information signals) is hard to distinguish from behaviour arising from time preferences. This signal-extraction problem leads the Bayesian agent to behave in a way similar to time preference. The authors called such seemingly impatient behaviour *as-if discounting*.

back to the academic literature and our research subject, we also observe a convergence of opinions concerning the presentation of discounted utility; its most accepted form is the discounted utility model introduced by Fisher (1930) and then developed by Samuelson (1937)[253]. Consequently, in this research, we apply the most traditional discounting conceptualisation based on the proposed formulation by Samuelson to determine the materiality threshold for ESG risks with long-term outcomes. Here, we should explain that such choice of the discounting model to apply just as it was in the case of the choice of an expected utility function type for modelling of the general materiality definition is not accidental. The discounting formulation to be applied is dictated precisely by the fact that our decision-making problem is considered within the constraints of the FD legal framework. As we explained earlier, the progressive introduction of the Modern Portfolio Theory in its classical conceptualisation at the basis of the FD legal standard and, consequently, the reliance of the legal rule on the traditional neoclassical economic tools as relates to investment and risk management process, predetermine the analytical framework for materiality definition. As we attempt to reconstruct an exact definition of materiality as allowed by the modern FD law, we develop this definition within the stated conceptual constraints. The interpretation of the Prudent Investor Rule in terms of a rational risk-averse expected utility maximiser implies that this decision-maker does demonstrate a pure time preference in related to future outcomes (she does discount future outcome values) but this preference is constant (always the same rate of discounting) and consistent over time (preferences do not change over time). Under such assumptions and constraints, our decision-making problem will be modelled in the form of *exponential discounting* (based on the work of Samuelson, 1973) as applied on the von Neumann-Morgenstern expected utility function defined in **Section 1**.

Before passing to the modelling of our decision-making problem, and despite the fact that we apply discounting in our research, we would like to note once again the debates among economists on the applicability of discounting as

[253] *Despite Samuelson's manifest reservations about the normative and descriptive validity of the formulation he had proposed, the DU model was accepted almost instantly. A central assumption of the DU model is that all of the disparate motives underlying intertemporal choice can be condensed into a single parameter — the discount rate* (Shane, 2002)

a ubiquitous tool for decision-making analysis. Particularly, this question evokes ardent discussions when it comes to the empirical evidence of the choice of a concrete discount rate and its application by economic agents in various decision-making problems. Namely, in macroeconomic literature we find evidence of definition of discount rates in the context of households life-cycle saving behaviour structural models estimation, the discount rate in different studies ranging from 4% to 15% (depending on assumptions taken by different authors: Lawrence, 1991; Carroll, 1997; Carroll & Samwick, 1997; etc.). In environmental research, particularly when related to the climate change and carbon management risks, the discount rate applied to measure the present value of future damages varies from 0% to 5% (also depending on the assumptions); this variance drastically affects the potential corresponding price of carbon which, as a result, varies from less than 10 USD to over 80 USD.[254] This was particularly demonstrated by Nordhaus (2008), Stern (2007), Faber & Hemmersbaugh (1993) and others. In their turn, Harvey (1994) proposes an adaptive, non-constant discounting concept, and others like Howarth & Norgaard (1995) or Daly & Cobb (1989) rejected the concept of discounting and proposed the use of zero discounting rate when the management of environmental resources is involved.

In the domain of decision-making, various empirical and experimental studies at different times unveiled a high diversity of discount rates used by individual decision-makers in different spheres of their everyday life (choice among models of electrical appliances in relation to their energy efficiency characteristics, wage-risk trade-off situations as a choice of a riskier job for a higher salary, etc.). These studies showed that economic agents apply a discount rate that could attain, depending on the subject of the decision-making, values going from around 11% (and even less in some cases) to almost 300% (in some particular cases). These studies being grounded on observations of real life choices by economic agents or on analyses of hypothetical outcomes contain various limitations, which the authors are generally quite acquainted with

[254] *See* Charpin J.-M., Dessus B., Pellat R., *Rapport au Premier ministre, Etude économique prospective de la filière électrique nucléaire*, Juillet, 2000, 289p. See also Sumaila U. R., Walters C., Intergenerational discounting : a new intuitive approach, *Ecological Economics*, Vol. 52, 2005, pp. 135-142

(imperfect information, hidden costs, etc.). We name here such authors as Hausman (1979), Ruderman et al. (1987), Gately (1980), Viscusi & Moore (1989, 1990a, 1990b), Dreyfus & Viscusi (1995), Warner & Saul Pleeter (2001) and others[255].

Coming back to the decision-making by an investor, we note that a discount rate reference traditionally used by investors for debt markets (in opposition to equity markets) is represented by market interest rates. In this context, discounting is the primary factor used by investors in pricing of a stream of future cash flows of invested companies, with the higher risk being associated with the higher discount rate lowering the present value of a financial instrument. Based on this observations and, thus, being persuaded that the question of discount application will inevitably rise for long-term ESG risk factors consideration by investors in their investment risk management process, we proceed to the formulation of the materiality definition as applied to these risk factors.

2.1. Discounting and Materiality of Long-Term ESG Risks

In the classical discounted utility model based on the work by Samuelson the discount rate (p) is assumed to be equal to the rate of risk aversion (a) of a decision-maker, which corresponds to the constant relative risk aversion (CRRA) and, thus, implies a constant discounting rate, as assumed within the expected utility model under the considered FD rule. This is the decision-making modelling framework we apply in this research in order to discover a potential materiality interpretation for long-terms ESG risk factors.

We remind that in our case, an investor should make a decision in the face of an ESG risk factor; she has two choice options, which are to Hedge a long-term ESG risk (Alternative Option) or not to do anything and suffer a potential loss (Basic Option). In this situation, the avoided loss that could be procured from the hedging option is uncertain and will be perceived only in the

[255] *See also* Sh. Frederick (2002) for a review of these and other cases of discounting.

future, as it is the expected loss suffered under the Basic option. For an illustrative purpose, we could assume that the identified ESG risk is the one related to the climate change with the associated expected loss based on the investor's portfolio exposure to fossil fuels industry to be suffered in a number of years (by 2030 or by 2050)[256]. Thus, the risk is of long-term consequences occurring within the presumed timeframe fixed by scientists. On the other hand, the cost of hedging is perceived by the investor as an actual loss occurring right now. In such circumstances, the materiality threshold given by the difference between the two future values of the two available options will be subject to discounting.

As it was said, due to the fact that no reversed preferences are considered in our case, meaning that our investor is consistent in his choice over time, we apply exponential discounting to our decision-making problem in order to define long-term risks materiality. We use the same decision-making framework and the same assumptions as well as the same specifications for the form of the utility function as earlier in **Section 1**. However, as our investor's decision implies some long-term future outcomes, the integration within our model of a discounting in its exponential form is required.

The exponential discounting applied with the isoelastic utility function *U(x)* exhibiting the standard constant relative risk aversion assumption (CRRA as defined by Arrow-Pratt) for preferences specification[257] implies some concrete definition of the assumed time preference rate. For isoelastic preferences, the intertemporal elasticity of substitution (or time preference rate) is constant and equal to the reciprocal of the degree of risk aversion (risk aversion coefficient η), which corresponds to the CRRA rate (η) incorporated in

[256] Carbon Tracker Initiative stated in its research in 2012 that in case the climate change to be limited to the 2 degree by the end of the century, only 565Gt of CO_2 could be burned before 2050. At the same time, oil major (Shell) recently announced that fossil fuels will be needed through 2050 to reach the 2 degree target: https://www.reuters.com/article/shell-climatechange/shell-says-fossil-fuel-reserves-wont-be-stranded-by-climate-regulation-idUSL6N0O54CB20140519

[257] Traditional models of economics assumed that the discounting function is exponential in time leading to a monotonic decrease in preference with increased time delay.

the form of the U-function[258]. By that, in our framework of decision-making by an investor under the FD requirements, the degree of risk aversion and, thus, the degree of time preference are assumed to be positive and constant. Having specified the changes in the context, we are now passing to the calculation of the present discounted value of the future expected utility corresponding to each of the two options (To Hedge and Do nothing) available to our investor. Therefore, we consider a particular period of time (t_0 to T) corresponding to the time between a decision taken by our investor now (t_0) and the moment in the future when the expected outcome associated to the ESG risk would happen (T). We also integrate within the model a positive discount rate p dictated by the time preference rate implied in the discounting model. As a result, the investor faces now the Basic Option with the expected utility of the associated outcome being represented as:

$$Eu(x^*) = \int_t max \int_s e^{-pT}\, U(x(s, a))\, dp(s)\, dt,$$

where e is a constant and p is the discount rate applied by the investor.

However, our investor also has an Alternative decision-making option, which is an option to Hedge the identified ESG risk, represented as:

$$Eu(x^*/y) = \int_t max \int_s e^{-pT}\, U(x(s, a(y)))\, dp(s/y)\, dt - U(w(t)),$$

where $w(t)$ is a monotone decreasing function of cost.

Consequently, as it was earlier illustrated, the value of the ESG risk factor consideration and hedging by our investor is given by the difference between the investor's expected utilities associated with the two available

[258] In our case η is implied within the form of the utility function, which is $u(x) = \frac{x^{1-\eta}}{(1-\eta)}$ (for η>0), where the intertemporal elasticity of substitution is equal to $\frac{1}{\eta}$. Here, as it is the case quite often, the elasticity of intertemporal substitution cannot be disentangled from the coefficient of relative risk aversion.

decision-making options. If this value is positive (>0), given the actual present cost that could be suffered by the investor while hedging the ESG risk, the risk factor will be qualified as *material* for the risk management and investment decision analysis. However, now the investor is considering these options in the long term. Thus, using the standard materiality threshold definition, $M(y) \geq U(w) + k$, it is possible to reformulate it and adapt it to long-term ESG risk factors by integrating the discounting principle in the following way:

$$Eu(x^*/y) - Eu(x^*) \geq U(w(t)) + k',$$

where k' (as k in the general representation of the materiality) is the minimum difference between the two expected utility values of loss that is necessary to be produced through the ESG risk hedging to consider this risk as *material*. This interpretation implies that the potential losses associated with the ESG risk are significant enough to affect, if the risk is not hedged by the investor, the overall fund's risk exposure. However, in case of long-term ESG risks materiality, the value of k corresponds to the minimum substantial magnitude of avoided loss in the long run, i.e. in relation to the future fund' overall risk exposure at date T when the risk occurs. As a result, the value of k changes to k' that is the compound future value of avoided loss at date T when the risk occurs:

$$k' = k\, e^{pT}$$

This means that for long-term ESG risks the quantitative materiality standard would increase, as, in the face of the actual total cost of the ESG risk managing at t_0, rational prudent investors will seek to assure a higher minimum material benefit in terms of avoided loss (k') over time (T). In other words, the discounted expected value of loss (k') should represent the minimum magnitude that is sufficiently big to induce a change in the total fund's future risk exposure at point T when the risk is expected to occur. As a result, the materiality threshold for long-term ESG risk factors would be:

$$M(y) \geq k\, e^{pT} + U(w(t)),$$ or

$$M(y) \geq k' + U(w(t))$$

On this basis, it is now possible to specify the materiality definition for long-term ESG risk factors.

Definition 4. *The materiality threshold represents a minimum substantial magnitude of future expected loss avoided through the consideration of a long-term ESG risk factor in the investment and risk management decision (given the actual cost of this integration) that, if not avoided, would be sufficient to induce a non-negligible change in the fund's overall expected risk exposure (at date T).*

In the context when the concept of discounting is ubiquitous in the decision-making by an investor and, as we can see, has implications for the definition of the materiality within the investment risk management framework, the question that could be asked next concerns the discount rate (p) to apply by an investor under the FD rule. Further, we analyse the structure of a discount rate to be considered by an investor under the fiduciary duty standard. For this, we analyse the time preferences of an investor under the FD rule and then attempt to structure the discount rate (p) in response to the FD intergenerational problematics.

2.2. Fiduciary Duty of Loyalty and Materiality Solution for Long-Term ESG Risks

The debate about myopic behaviour of institutional investors in the economic literature is endless. Authors come to different conclusions depending on decision-making problems analysed, methods used and data tested. Some consider that institutional investors exhibit preferences for near-term earnings over long-run value what can eventually affect stock prices of entities (Bushee 2001, Graham et al. 2004)[259] and, more generally, capital markets. Investors

[259] *The results provide no evidence that high levels of ownership by banks translate into myopic mispricing. However, high levels of transient ownership are associated with an over- (under-) weighting of near-term (long-term) expected earnings, and a trading strategy based on this finding generates significant abnormal returns. This finding supports the concerns that many corporate managers have*

viewed as myopic and pushing corporate managers of companies they invest in to myopic behaviour as well (Stein 1988, 1989). The research by the Bank of England warns about a *rising tide of myopia* that could potentially present one of the causes of market failure (Haldane & Davies, 2011). On the other hand, other authors find arguments against the *popular myth* that the short-term profit pressures of large institutional stockholders influence the decisions by a company management (Hansen & Hill 1991).[260] Many scholars today also study the so-called practice of *long-term value creation* (Alexander, 2017) arguing that investors are aware of the risks related to myopia and thus refocus on a fundamental value of projects and companies they invest in. Generally, several authors defended the financial securities market by stating that capital markets are efficient and, thus, not short-sighted, meaning that they penalise myopic behaviour by companies' management (Jensen, 1988 and more recently Tong, 2014). Together these research works offer a great overview on the question of market (investors') time preferences and some of them explain particular types of investors' behaviour in reality. However, they do not present a direct answer to the question we raise in this research, which is: could an investor under the Fiduciary Duty rule be assigned any restrictions related to her time preferences? Or, otherwise saying, does the compliance with the fiduciary duty standard imply any particular considerations concerning the discount rate as applied by investors?

In behavioural economics, several authors showed that some characteristics of an individual who makes a decision could influence the rate of her time preferences and, consequently, the discount rate (Frederick et al., 2002). One of such characteristics is professional skills. It was, for instance, observed that many professional investors apply smaller discounts on future outcomes. However, such assumptions are quite debatable. On the other hand,

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about the adverse effects of an ownership base dominated by short-term focused institutional investors. (Bushee, 2001)

[260] *Contrary to the view that institutional investors are having a damaging affect oft R& D spending, after controlling for intervening effects the results suggest that higher levels of institutional ownership may be associated with greater R&D expenditures. A number of possible explanations for this finding are developed*. (Hansen & Hill, 1991)

Meir Statman (2017) describes some financial agents (precisely, financial advisors) as relatively neutral and moderate in their choice of discounting rate as their main task is to *correct the investment vision of final investors* [beneficiaries] *and lead them to prudent investment choices* (Statman, 2017). However, these propositions do not correctly inform about the possible time preferences of institutional investors and asset managers neither. Thus, we attempt to form our own opinion on the matter.

2.2.1. Long-Term ESG Risk Factors and FD of Loyalty

In an intriguing way, the indication of institutional investors' time preferences, in its general form, would come from the fiduciary duty rule itself. Hawley et al. (2011) argue that one of the constituents of the fiduciary duty standard – the duty of impartiality as part of the investors' core fiduciary duty of loyalty – *requires that trustees balance short-term and long-term considerations.* This refers to the intergenerational nature of such institutional investors as for example pension schemes, which would be particularly considered here for the definition of the discount rate structure under the FD rule. Thus, we state that the duty of impartiality could also require consideration of long-term ESG risks by investors, particularly where myopic investment practices (with high present time preference) might negatively affect long-term value of investment capital (Croft & Malhotra, 2017). For instance, in 1996, the United States Supreme Court, in Varity v. Howe case, stated that *the common law of trusts* [made applicable to ERISA §§404, 409] *recognizes the need to preserve assets to satisfy future, as well as present, claims and requires a trustee to take impartial account of the interest of all beneficiaries*[261]. Thus, considering that the fiduciary duty rule generally requires a fiduciary to act in

[261] Same reasoning can be found in the following initiatives: Restatement of Trusts, Third (1992), Comment (c) to §79(1). In the United Kingdom, the 1984 case of Cowan v. Scargill turned on impartiality. *See also* Withers v. Teachers' Retirement System (1978, 1257–58). The CFA Institute's Code of Conduct for Members of a Pension Scheme Governing Body advises that an effective trustee will *consider the different types of beneficiaries relevant to each pension scheme* and *engage in a delicate balancing act of taking sufficient risk to generate long-term returns high enough to support real benefit increases for active participants who will become future beneficiaries while avoiding a level of risk that jeopardizes the safety of the payments to existing pensioners* (Schacht & Stokes, 2008)

the best interests of all beneficiaries taken within the framework of the long-term objectives of the investment scheme, we argue that a balance should be found between the short-term risk-adjusted returns for current beneficiaries and the long-term ones for the future beneficiaries of the scheme. The issue does not arise from the idea that the short-term investment risks management outlook is wrong but rather from the fact that fiduciaries should demonstrate competence with respect to long-term value creation and risk management and consider the potential transfer of risks between generations of beneficiaries (Hawley et al., 2011).

In this context, it seems that an investor under the FD rule should fairly consider the integrity of potential risks in order to form a prudent and impartial (loyal) investment management decision beneficial to all investment scheme beneficiaries. It thus could be concluded that a prudent investor under the fiduciary rule should demonstrate a more moderate present time preference and, thus, should discount future outcomes of long-terms ESG risks at a more moderate rate. The concrete definition of such rate is, however, a particular empirical question that is today an object of multitude studies. The definition of a discount rate is the core element of the evaluation of many ESG risks (particularly, environmental and climate change-related risks), which have major consequences for a design of efficient sustainable finance regulation and policies. Consequently, we continue our analysis of the concept of materiality within the assumption of the respect by our hypothetical investor of all the beneficiaries (current and future) as required by the fiduciary duty of loyalty.

In this context, it could be stated that the case of total absence of discounting when a fiduciary accounts only for the future beneficiaries' interests in her decision-making process opposes radically the commonly accepted phenomenon of *pure present time preference*. On the other hand, it could also be advanced that the case of discounting caused by a high level of investors' myopia or impatience generates risks of capital degradation in the medium and long term affecting all beneficiaries and particularly future ones. These two propositions indicate that a choice concerning the discount to apply is to be made by an investor (fiduciary). This choice must be in accordance with the requirements of her fiduciary duties, which imply, in the light of the

previously described duty of loyalty (impartiality), a relatively balanced and proportional consideration of both the present and the future.

Traditionally, in the environmental economics (namely, in the context of the analysis of the cost of climate change) there exist two well-known impediments to such balancing of future and present constraints within the structure of the applicable discount rate. The first concerns the wealth level of future generations taken in comparison to the state of wealth of current generations, given the hypothesis of positive economic growth being maintained in the future. In this case, to postpone consumption today in order to make an investment with a payoff in the future is not considered socially optimal this will only penalize current generations and enrich even more the wealthier future generations. Besides, the marginal utility of consumption for current generations given their lower hypothetical wealth level is bigger than it is for the wealthier future generations. The second obstacle relates to the *pure present time preference* condition, taken as an axiom for human behaviour. These two arguments persist and influence the discount rate upward (Cline, 1999)[262]. On the account of these constraints, Gollier (2011) states that *in decentralized societies like ours, the concern for the future of the myriad economic agents is coordinated by the setting of a single variable: the interest rate or the discount rate*. The debates are not closed, however, in our research the FD rule provides specific position stating a possibility and a necessity of conciliation of the present with the future.

2.2.2. General Principle for Discount Rate Structure under FD of Loyalty

Given the stated necessity for a fiduciary to consider the interests of future beneficiaries equally as the interests of the current ones, this principle should be reflected in the investment and risk management framework (due diligence) by investors. As a result, and particularly in case of long-term ESG risk factors, this would imply a compound structure of the applied discount rate,

[262] W. Cline (1999) proposed to consider these constraints within the structure of the discount rate and to use a rate containing two elements: a pure present time preference rate and a wealth effect.

which would incorporate the views on long-term ESG risks of future beneficiaries of the investment scheme. For illustrative purposes, we will consider here a concrete example of one of the types of institutional investors – pension plans; given that the global overview of FD legal standard we presented earlier in this thesis is focusing on pension schemes regulation. Thus, in this part of our analysis, we propose a formulation of a possible compound structure of such discount rate applied by fiduciaries on long-term investment risk management outcomes. This principle of a discount rate structure could be used by investors to respond to the needs of all beneficiaries (future and current) and, thus, to comply with their fiduciary duties. For this, we consider the work by John R. Doyle (2013), where he proposed a comprehensive representation of various existing discounting models as well as associated discount rate structures. Also, with the objective to concentrate our attention specifically on the structure of the discount rate, we simplify a bit our analytical framework.

Consequently, here we reduce the representation of our decision-making problem to a more standard and simplified discounting representation often used in finance. Namely, we consider *F* as a future value of an outcome associated with as ESG risk that is expected to occur at time *T*; *P* as a present value of this outcome obtained through discounting of *F; p* as a discount rate applied to the future value of an outcome to measure its present value and to make a decision on this basis. Therefore, we could present our long-term decision-making problem studied earlier in its simplified continuous formulation:

$$P = F\, e^{-pT},$$

where the expected present value of the ESG risk outcome equals to its discounted future value. It is exactly the same reasoning as the one used earlier to define the materiality threshold of long-term ESG risk factors. Based on this formulation, we can continue to the definition of the discount rate *p* applied to derive the present value of the future outcome, which would be:

$$p = \frac{[log(\frac{F}{P})]}{T}$$

As we stated earlier, under the duty of loyalty (impartiality) an investor should consider in the same manner the interests of the future and the current beneficiaries of an investment scheme. Thus, we suppose that future beneficiaries would not apply a discount (or very small, negligible discount) on the future value of the outcome (loss of capital) associated with the identified long-term ESG risk. As a result, they will consider the present value of the future outcome close to its real expected future outcome, i.e. $P_f \equiv F$ (where P_f symbolises the present value of a future outcome for future beneficiaries). On the other hand, current beneficiaries would continue to discount in a *usual conventional* way (for example, by using the market discount rate) the future outcome to define its present value represented by P_c. This means that for the one and the same value of the outcome in the future F, our investor ideally needs to consider two different corresponding present values P_f and P_c in the formulation of the discount rate to apply. As so, the structure of the discount rate (in order to respect this logic as required by the fiduciary duty of loyalty) should include both corresponding present values. This could be done relatively simply by introducing a weighted arithmetic mean of these two variables $\bar{P}$ in the discount rate structure:

$$p = \frac{[log(\frac{F}{\bar{P}})]}{T}$$

$$p = \frac{ln\,F - ln\,\bar{P}}{T}$$

$$p = \frac{ln\,F - (w\,ln\,P_f + (1-w)\,lnP_c)}{T},$$

where w is the weight corresponding to the present value of a future outcome as it is perceived by the future beneficiaries and (1-w) is the weight being attributed to the present value of a future outcome as it is perceived by the current beneficiaries. Also, $w \in [0, 1]$.

Further, we assume that w could depend on the maturity m of the investment scheme (for instance, a pension plan) at the point t_0 when the trustee does make a decision based on the information about the identified long-term ESG risk with the associated loss occurring at t (when the associated expected loss would be

experienced). Naturally, it is possible to define *w* as a function of the funds maturity *m*. We assume that *w* is a decreasing function of a plan's maturity *m* ($w = f(m)$), where $m \geq 0$. In its turn, pension maturity itself could be presented as a function of employee demographics *d*, which is the ratio of the number of current to the number of future beneficiaries of the plan. By that, *d* can be used as a natural proxy for the maturity *m* of the fund, thus $m = d + \varepsilon$, where $d \geq 0$ and ε is an error term. As the demographics ratio *d* is defined using the same units in both the denominator and the numerator, it can be expressed very simply as a percentage of current beneficiaries of the total number of beneficiaries (current and future) of the fund. We note that, in pension schemes management, maturity is often understood as the point at which a number of current beneficiaries of the plan matches exactly a number of its future beneficiaries. However, in our analysis, we understand maturity within the concept of a lifecycle of the pension plan, i.e. from the birth of a scheme through the maturity point towards its *full maturity*, where all beneficiaries of the fund are current.

Naturally, when the demographics ratio (i.e. the percentage of current beneficiaries) grows, the maturity of the fund increases and the weight *w* attributed to the present value of the outcome based on the consideration of the future beneficiaries interests decreases. At the maturity point, where $d = 50\%$, the weight *w* attributed to P_f will be equal to the weight attributed to the present value P_c. Simply saying, at this point the number of future beneficiaries is supposed to correspond to the number of current beneficiaries of the plan. Then, after having reached this maturity point, the value of *w* continues to decline (and the hypothetical compound discount rate *p* continues to rise) till the end of the investment plan's lifecycle, i.e. till the realisation of its *full maturity*.

As a result, according to this principle, at the very beginning of the plan, when the number of current beneficiaries is very low or even equal to zero, the value of long-term risks would not be heavily discounted or would be discounted very weakly. Then, the discount would start to grow (as the number of current beneficiaries as well as the weight attributed to the P_c would grow). As the plan would be approaching its maturity point, the two weights *w* and (*1-w*) would become equal. Once mature, the plan would continue to increase the discount rate till the end of its lifecycle (as *w* will be declining through years). This means that the value of

w will continue to decline as the number of future beneficiaries goes down, both tending towards zero at the end of the plan's lifecycle – full maturity point.

We suppose that institutional investors have a capability to adjust the discount rates they could use in their investment risk management due diligence frameworks in order to establish a materiality of a risk factor (as it was stated earlier, professional investors tend to do so in practice). Based on this assumption, we propose this general principle of the discount rate structure that lies perfectly in compliance with the fiduciary duties of investors. Institutional investors under the FD standard are expected to control for the discounting decisions they make and to adapt them in the face of long-term ESG risk factors in response to the interests of the total population of their investment scheme's beneficiaries (current and future). Consequently, we propose the following formulation for the definition of the materiality for long-term ESG risks, which would integrate the stated general principle of discount rate structure.

Definition 5. *The materiality threshold represents a minimum substantial magnitude of the present value of the future expected loss avoided with the consideration of a long-term ESG risk in the investor's decision-making process (given the actual cost of this consideration) that, if not avoided, would be sufficient to induce a non-negligible change in the fund's overall expected risk exposure. The present value would be defined through an equal and proportional consideration of both current and future liabilities of an investment scheme.*

A pension fund that is growing or that does not have any immediate liabilities of an important value (such as the pay-out of benefits, etc.) can and should invest for the long term. When the plan matures, more of the capital is relied upon to pay current benefits (this proportion of funds is generally protected from short and mid-term risks, including volatility). However, at the beginning of its life cycle and even at the maturity point, the fund's capital is provided by new and early-stage contributors, who represent future beneficiaries and whose interest an investor should protect in the long run. By connecting a discount rate structure to the maturity of a pension scheme, it is possible to arrive towards a framework allowing for long-term risks consideration as part of a fulfilment of an investment scheme's strategy. In case of pension schemes, this would relate to the fulfilment of pensions liabilities, which perfectly corresponds to the objectives and satisfies the requirements of the trust

fiduciary law applied to institutional investors (in this concrete example, to pension plans).

Generally, as we could see earlier, the process of investment risk management as governed by the FD rule implies identification and assessment of all risk factors, which are material for an investment scheme. In this context, the definition of materiality is crucial for a correct qualification of observed risks as relevant for an investment and risk management decision by a fiduciary. As a result, the absence of a proper guidance on what risks are material and, thus, must be considered and managed under the investors' FD obligations, might leave those, whom the fiduciary regime aims to protect in the first place – the beneficiaries of an investment scheme – with insufficient and inefficient protection. In this context, we argue that there exists a need for a clear definition of materiality that would be compliant with the modern interpretation of the FD standard, particularly, as developed in the context of the coming EU ESG FD standard. Moreover, in the view of the coming regulation, it is important to clearly state to what extent ESG risk factors suit into the definition of materiality as it could be formulated under the requirement of the prudent investment decision-making in the best interests of current and future beneficiaries fixed by the FD law.

In our research, we provided solutions to these problematics, by designing of an analytical theoretical representation of the concept of materiality as related to ESG risk factors under the FD investors' decision-making constraints. Within this framework, we tested the definition of materiality as allowed by the FD law in relation to each of the specific characteristics of ESG risk factors (effect on investments, systemic character of some ESG risks and long-term character, etc.). This analytical representation of the possibilities of ESG risks consideration in investors' investment and risk management decision-making process under the requirements of the trust fiduciary law allowed us not only to trace the boundaries of the FD standard but also to discover some opportunities and solutions already provided by the rule of law on the matter. We thus defined that the DF law does allow for ESG risks consideration by investors. However, given that the legal

standard does not have any specific provisions as relates to ESG risks, we found that ESG risk factors under the constraints of the FD law are assimilated to conventional financial risks, and should thus be treated in a similar way.

Under this perspective, we determined that only financially material ESG risk factors, or more precisely those factors that have a potential to affect investment portfolio returns, are considered under the current interpretation of the FD rule. Consequently, we defined the standard of materiality of ESG risks under the FD rule based on this observation. As for ESG risks, the financial materiality of which cannot or can very difficultly be assessed today (due to the insufficient early-stage methodologies and imperfect data) we advocated for the introduction of a qualitative materiality standard. We state that such standard would be compliant with the FD rule and propose its concrete formulation. The same qualitative materiality standard could represent a solution for the consideration by investors of ESG risks of systemic nature (for instance, climate change-related ESG risks) potentially affecting financial stability and, by that, the value of investment portfolios (given that it is quite difficult to assess their exact impact on an investment portfolio). In this research, we considered separately the question of long-term realisation of some ESG risks and identified a solution for a consideration of long-term ESG risks by investors provided by the fiduciary duty of loyalty. As a result, we formulated a general principle of materiality consideration of long-term ESG risks based on the adjustment of the structure of a discount rate that could be applied by investors in their decision-making framework.

Thus, our analysis provides the first concrete and complete definition of ESG risks materiality as allowed by the FD rule. In this research, we considered all major characteristics of ESG risks (in opposition to conventional financial risk factors) and determined precisely what ESG risks are covered by the FD legal rule. We also provided recommendations on the reinforcement of the FD rule of law and the enhancement of ESG risks consideration by investors under this legal standard. Our work presents the first exercise of reconstruction of the FD constraints for a decision-making process by investors with the use of economic tools. Thus, by applying the economic theory of decision-making under uncertainty, we provide the first economic interpretation of the FD standard as well as its limits and possibilities in relation to ESG risks management and the definition of their materiality.

The results of this research might inform market practitioners and regulators of potential obstacles on the way to the introduction of ESG risks considerations into investors' decision-making process and would allow them to find the right measures to promote further the consideration of ESG information within investment sector regulation with the use of the FD law instruments. However, we note that there is another element, which plays an important role in the definition of investors' obligations and responsibilities in the face of ESG risk factors under the FD rule – the risk management action itself or, more precisely, its expected effectiveness. This element will be thoroughly discussed in **Chapter III** of this research.

III. SUSTAINABILITY RISKS MANAGEMENT AND INVESTOR'S FIDUCIARY LIABILITY UNDER US LAW – CLARIFICATION ESSAY

Having proposed the definition of materiality of ESG risk factors, which aims to determine what risks are to be considered in the investing and risk management decision-making process by institutional investors, we now come to the question of whether the consideration of *materiality* alone is sufficient to fulfil the fiduciary duty of investors. Otherwise saying, the question we ask is whether materiality is the only element to account for in the decision-making in order for investors to provide a sufficient level of precaution in investment risk management that will allow them to avoid a potential liability for a breach of their FD. We discovered earlier in **Chapter I**, that the materiality definition seems to represent only one of the core elements for qualification of an investment and risk management decision under the FD rule; the other one appears to be related to the management decision itself, i.e. to the effectiveness of a management action in the face of a material ESG risk. A simple graphical presentation of the materiality (**Figure 1**) reveals the link between a management decision and the materiality of risks for the definition of investors' investment risk management obligations under the FD rule of law.

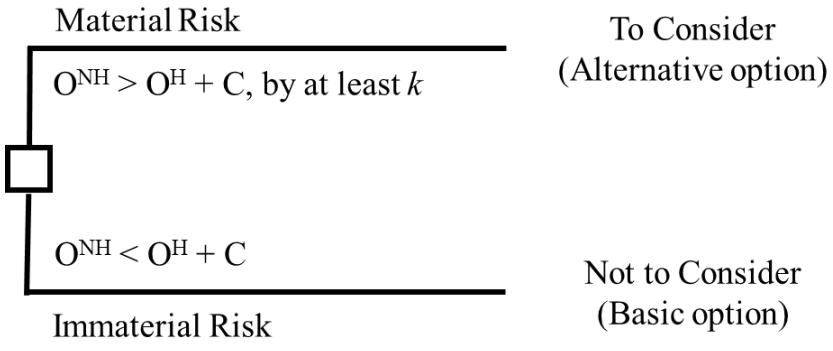

Figure 1. Graphical reconstruction of the materiality definition as determined in **Chapter II**.

At the basis of our definition of materiality (**Figure 1**), as defined in **Chapter II** of this thesis, lies the assumption that an active risk management, or *hedging*[263], action used against an ESG risk is completely affective, i.e. reduces losses almost to zero. This assumption allows to focus only on the value of the loss associated with an ESG risk that an investor qualifies as material or not. The outcome (losses) produced by ESG risks negligence (O^{NH} is an outcome of *No Hedging* action) is compared to the quasi-absence of losses (taken isolated, ceteris paribus) in case of ESG risks consideration by an investor in her risk management process (O^{H} stands for an outcome of the *Hedging* action), given the cost of hedging (C). Based on the materiality principle, we know that all material risks should be identified and considered in the investment and risk management decision-making process in compliance with the FD standard. However, *does this imply an active risk management action by a fiduciary vis-à-vis each of the identified material ESG risks*? To answer this question, we need to study a risk management action by a fiduciary out of the materiality definition context. We should consider it as a separate step in investor's decision-making process in the face of identified material ESG risks. In this context, a particular question of the effectiveness of a chosen management action to treat material ESG risks and its qualification under the FD rule rises.

The definition of materiality can be formulated as a general principle applicable for all investors in their management strategies. In this light, a choice by an investor of an action to manage the identified material risk also needs guidance in order to provide socially optimal outcome in terms of the efficient protection of an investment scheme's beneficiaries from capital mismanagement. This is particularly true given the uncertainty problem related to the effectiveness of a risk management action. We note that this problem concerning uncertainty about the effectiveness of this or that hedging action is particularly important in the case of ESG risks management due to early-stage and currently limited methodologies as stated earlier. Seeking for guidance on how to make a choice of a risk hedging measure in the presence of uncertainty about its effectiveness in mitigating risks, we found that the trust fiduciary law itself, through the associated liability standards, offers some

[263] Here we will use the term *Hedging* to englobe all possible actions by an investor to avoid or mitigate identified risks.

principles on the matter[264]. The fiduciary duty standard plays an important role in the encouraging fiduciaries to a proper investment and risk management behaviour. Grounded on the principles of the tort liability of negligence (as discussed in **Chapter I**), the FD rule stimulates the adoption by a fiduciary of optimal precautionary measures. Otherwise saying, it provides incentives to the optimal choice of hedging measures to take in the face of material risks including ESG risks. This optimal choice would be based on the idea of the efficiency and effectiveness of a hedging action. In this context, we could state the following principle guiding the choice of a risk management measure by a fiduciary:

*The FD standard requires an investor to take an active measure in the face of an ESG risk (i.e. to hedge an ESG risk) if **(1)** this risk is material and if **(2)** the investor's action is sufficiently effective*.

We thus advance that logically the choice of a hedging action by a fiduciary as well as the qualification of its effectiveness should be guided by the *optimal precaution* principle of the tort liability of negligence; with the appropriate enforcement of this principle in court. We note here that if the efficient enforcement of the optimal precaution incentives is not guaranteed in court, this might induce bias in investors' choice of hedging action that might leave with insufficient protection those, whom, the trust fiduciary law aims to protect in the first place – the beneficiaries of an investment scheme.

We stress that we adopt in our analysis an exploratory research strategy given the fact that the question of the effectiveness of a hedging action as one of the elements determining the FD of investors in the context of ESG risks management is not discussed in the current literature on the ESG FD concept. By that, the question of potential importance of this element for the determination of investor's liability under the FD rule is quite novel. Thus, we will provide here the first attempt to explore this question with the use of a Case Study method and applying Law & Economics analytical tools. Namely, we provide an analysis of the recent legal claim against Exxon Mobil Corporation in a particular context of the US trust fiduciary law applied to private pension schemes (a specific

[264] In particular, the pleading standards as part of the set of global requirements to state a breach of fiduciary duties – the legal system of proof.

type of institutional investors). This case is the first having been filed against a private pension scheme manager (fiduciary, i.e. Exxon) based on allegations by the scheme's beneficiaries that Exxon through an improper management of an ESG risk factor caused losses to its private pension plan. To date, this is to our knowledge the only existent legal case filed on the subject of improper management of ESG risk factors by investors (fiduciaries). Thus, it represents the sole object of this case study. The choice of the research method – case study – was governed by the uniqueness of this legal case, the complete novelty of this lawsuit and of the subject of the study as well as by its reference to such new research field as Law & Economics of ESG risks management by investors. We note that given the novelty of the research subject, we selected the most illustrative and case pertinent tools of the Law & Economics theory for its analysis in order to provide a clear and intuitively relevant overview of the problem; by that, we lay the ground for further research on the matter.

Generally, case studies represent a valuable research tool for a proper analysis of contemporary phenomena taken in the context of their development and real application by economic agents. This method also allows an exploratory research of the most recent events related to a chosen phenomenon. Considering the novelty of the research question, the current dynamic development of the concept of ESG FD and the lack of evidence in terms of concrete legal and judicial qualifications of the ESG FD concept, this case study presents a perfect opportunity to supply the analysis of ESG risks management by fiduciaries with new potentially relevant elements. Thus, the analysis is organised as an exploratory study and, given the uniqueness of the legal claim, takes the form of a single case study. To structure this case study we will use the inductive approach, which consists in a gradual analysis of each of the pieces of evidence emerging from the case. Then, using these observations, we will attempt to formulate their analytical interpretation and their possible generalisation in relation to the purpose of this research – to qualify the effectiveness of a hedging action as one of the core elements determining investors' liability under the FD rule. The inductive strategy is particularly useful in our situation. It allows, in the context of the lack of information on the subject of the study, to answer the purpose of our research through an analysis of a real phenomenon (the Exxon lawsuit) and its interpretation in relation to the research subject. This is exactly the process we consider to apply here.

Such qualitative analysis opens access to unconventional (versus quantitative analysis) types of evidence that allow to inform the research on a new phenomenon in the absence of other data. In our research, we will use two main sources of evidence to structure our case study. The first one is the general analytical framework of the formulation of an optimal precautionary measure (here, an optimal hedging decision) under the ERISA FD liability standards. The second source is the legal documentation related to the object of our study – the litigation case. We will analyse all elements of the judicial decision relevant to the question of a hedging action choice by a fiduciary (Exxon), including the references to precedents and to other legal sources used by the judge to formulate her final decision issued in February 2019. We will not consider other aspects of the legal case, such as causality and its link to risks materiality, or others. We will concentrate our analysis only on the elements related to the concrete problem formulated earlier – effectiveness of a risk hedging action and its qualification under the FD law. Thus, we will only select evidence relevant to this particular question, by dropping all the other data from the analysis. We will see through the analysis of the available evidence that this case study does provide some information on potential difficulties in terms of qualification of a fiduciary's hedging action in the face of an ESG risk. We will then discuss the limits and possibilities of the generalisation of the conclusions of the case study to this global problem.

1. US ERISA LITIGATION CASE OVER ESG RISKS MANAGEMENT BY INVESTORS

We thus start with a presentation of the legal case and advocate that the case provides a particular view on the studied question of a choice of hedging action by a fiduciary in the face of ESG risks. As we detailed earlier in **Section 2 of Chapter I** of the thesis, in the lawsuit *Fentress v. Exxon Mobil Corp.* the Plaintiffs, namely current and ex-employees of Exxon, alleged a breach of fiduciary duties in the management of a private defined contribution plan administered by Exxon for their account. The allegations stated that this potential breach was caused by a mismanagement by Exxon of the pension fund in the face of a concrete ESG risk factor – climate change-related risk. Thus, the case was brought to court under the

US Employee Retirement Income Security Act (ERISA). We also remind that the judge Ellison of the District court of the Southern District of Texas repeatedly dismissed the claim, last time in February 2019.

The main accusation made by the Plaintiffs against Exxon was based on the assumption that the company had made materially false and misleading statements when had highlighted its strong business model and transparency especially in regard to its oil and gas reserves exposed to climate change-related risks. By doing that, Exxon endangered the value of the company itself and consequently of the pesnion accounts of its employees given that the company's stocks represented the major share of the pension fund. This behaviour of Exxon, according to the Plaintiffs, could be classified as a breach of their fiduciary duties. Particularly, under the expressed assumption, the materiality of the stated false information was reflected through a drop in Exxon's stocks price and, consequently, in the Exxon retirement fund performance causing some noticeable losses to the Plaintiffs. The drop was interpreted to be related to the fact that Exxon having been aware of the company's exposure to the stranded assets risk[265] did not consider this risk in its pensions plan management, in which Exxon's own stocks represented the main invested asset. Nor the company disclose the related information to the market; according to the allegations, they just hid this information[266]. As we thoroughly explained in **Chapter I** and **Chapter II** of the research, the risk of stranded assets represents a possibility of depreciation of oil and gas reserves or assets of a company due to potential future regulatory or economic constraints to the usage of the total volume of such reserves designed with the objective to avoid climate change. Today, it is considered that with the global goal to mitigate climate change, some part of oil and gas reserves would not be allowed to extraction and use; this part of assets will

[265] The issue of stranded assets has attracted increasing attention for the last couple of years, particularly in relation to the idea that climate change policy could induce stranded assets if governments live up to their commitments to keep global warming below 2ºC. The investment consequences of this may include dramatic reductions in the value of particular assets, such as conventional coal-fired power stations that are no longer permitted to operate because of constraints on their GHG emissions.

[266] Plaintiffs allege that Exxon failed to disclose that, given the risks associated with climate change, known by Exxon, the entity should have written down a part of its reserves as "stranded". It was also assumed that Exxon used an inaccurate "price of carbon" in evaluating the value of its future oil and gas reserves. Given that it was alleged, that Exxon "materially overstate[s] the value of its reserves." *Fentress v. Exxon Mobil Corp*. (Civil Action No. 4:16-CV-3484), Memorandum & Order, United States District Court Southern District of Texas Houston Division, March 30, 2018.

then become stranded. Exxon, as a representative of the oil and gas industry, is thus exposed to the risk of stranded assets and the company started to incorporate this risk in its reserves management several years ago. In our legal case, the allegations advance that Exxon did not disclose the information on stranded assets related to the company's reserves in due course (as it normally should have been done). Then, moreover, and most importantly, Exxon did not consider this stranded assets risk in its private retirement scheme management to protect the pension fund, which was highly invested in Exxon's shares, from losses caused by this risk. Generally, we can qualify this litigation case as quite particular as the lawsuit belongs to a specific *niche* in the US ERISA litigation – stock drop cases in the context of private employee stock ownership plans (ESOP) management. We discuss the schemes covered by the US ERISA provisions more extensively in **Chapter I** of the thesis. We note here that the particularity of ESOPs is that they offer the stocks of the retirement plan sponsor (a company that establishes the plan for its employees) as a central investment option to the plan's participants. Such funds are thus heavily invested in the stocks of their own manager company.

Coming back to our research problem we can state that in this litigation case the definition of the risk's materiality would be expressed via the value of losses produced by the stock drop caused by a potential breach of duties by the fiduciary, i.e. by Exxon. This is completely in alignment with our conceptualisation of materiality as developed in **Chapter II**. Therefore, it is not the materiality concept that is challenged in this lawsuit (even if the judge Ellison contested through the causation analysis the actual materiality of the stranded assets risk for this particular fund). The element that attracted the general attention and raised most ardent discussions was the concrete action of Exxon in the face of a potentially material ESG risk. More precisely, in their claim the Plaintiffs question the decision taken by Exxon not to hedge the internally[267] identified and potentially material ESG risk. The court should have decided on whether this *Do Nothing* option was the right one for the fulfilment by Exxon of its fiduciary duties. For this, Plaintiffs defended in front of the judge the existence of alternatives to Exxon's decision to Do Nothing, by

[267] Known by Exxon on the basis of insider information related to the amounts of oil and gas reserves of the company. For the general presentation of insider information stock drop cases *See* **Chapter I** of the thesis.

presenting to the court several potential alternative management actions in the face of this ESG risk. The Plaintiffs stated that the Defendant should have chosen to apply one of the possible hedging actions that would have represented a proper precaution measure in the face of the risk versus Do Nothing option. In this context, following our analysis of the liability standards in the US trust fiduciary law in **Chapter I** of the thesis, we examine this claim from the angle of precautionary requirements under the regime of the tort liability of negligence and its due care principle. We thus consider our first source of information for the qualification of a hedging action under the FD rule – the analytical framework of optimal precaution under the ERISA tort liability of negligence.

Under this perspective, we now analyse the decision by Exxon not to hedge by any means the identified potentially material ESG risk through the prism of its efficiency in relation to the optimal standard of care under the applicable ERISA FD liability rule. Particularly, we want to understand what characteristics the decision not to hedge the risk made by Exxon as compared to its possible alternatives proposed by Plaintiffs should have had to be compliant with the optimal precaution principle lying at the basis of the tort liability of negligence under the trust fiduciary rule. Or, more generally, we try to characterise the general principle of optimal precaution in relation to the choice of action by a fiduciary.

From this point of view, we consider the level of precaution associated to a risk management decision that a fiduciary should have taken in the face of an ESG risk. As a principle, it is the tort liability standard of due care that defines the optimal level of precaution that should be taken by a fiduciary to comply with the law. Then, in its turn, the judicial doctrine, which includes the interpretations and the enforcement of the tort law through the related procedural law instruments, guarantees that any precautionary action taken by the fiduciary below the optimal level of precautionary measures established by law brings about her liability. This implies that both regulation and judicial doctrine should incentivise the save optimal precautionary behaviour by a fiduciary. Coming back to our Exxon litigation example, we note that it represents a very specific case as it falls under the particular provisions of the US ERISA regulation - ESOP stock drop cases based on insider

information[268]. Thus, if for such lawsuits the general framework of the tort liability of negligence would still provide the standard of optimal level of precaution, the enforcement of this standard by the judicial doctrine would here be grounded on a very specific and unique principle. Namely, the enforcement of this standard in court is provided (inter alia) with the ERISA ESOP specific *pleading standard*, which imposes the *alternative action test (AAT).* This test is used at the very first stage of the litigation procedure to determine whether a fiduciary did have an alternative to her actual decision. If at least one alternative is identifiable and could potentially be feasible by a fiduciary the court determines that a claim should proceed to the next stage of the trial; if not, the claim is dismissed at the very beginning of litigation. We will now consider each of these two legal frameworks separately.

The tort liability of negligence under the US trust fiduciary law is governed by a famous principle proposed by the American Judge Learned Hand in 1947, which forms the basis for the definition of the optimal level of precaution in negligence-based lawsuits[269]. Adapted to our research subject the general formulation of the Hand rule states that a fiduciary is negligent and liable for not having considered a material risk if the risk management action brings benefit versus the basic Do Nothing option and this benefit is higher than the cost of this action[270]. Given the fact that the Hand rule is grounded on the concept of efficiency, it searches to induce optimal precaution by fiduciaries. We note that, generally, the definition of an optimal level of precaution according to the Hand Rule in tort negligence-based liability is considered within a risk-neutral framework[271]. Simply saying, the optimal level of precaution is calculated and the associated precautionary standard are

[268] This is a quite particular case of regulation under the US ERISA, see more details in **Chapter I** of the thesis.

[269] The solution was first introduced by Judge Hand in United States v. Carroll Towing Co. lawsuit (159F.2d 169 (2d Cir. 1947). *See* more on this subject in Cooter R. D., Ulen Th., *Law and Economics*, 6th Edition, Berkley Law Books, 2016, 570 p, pp 187-227.

[270] Naturally, this principle is considered in this research in its marginal formulation. To remind, *the marginal Hand rule states that the injurer is negligent if the marginal cost of his or her precaution is less than the resulting marginal benefit*. *See* more on this subject in Cooter R. D., Ulen Th., *Law and Economics*, 6th Edition, Berkley Law Books, 2016, 570 p, pp 187-227.

[271] K. Lee, Risk Aversion, the Hand Rule, and Comparison between Strict Liability and the Negligence Rule, *Review of Law & Economics*, Vol. 12, January 2015: *One of the most important propositions in the economics of liability rules states that strict liability and the negligence rule are equivalent and first-best efficient if the standard of due care is set according to the Hand rule. This proposition hinges on the assumption that individuals are risk neutral.*

defined on the assumption of risk-neutrality. Surely, risk-aversion can be considered in the interpretation of the behaviour of economic agents applying the optimal precautionary standard established by the tort law. For instance, risk-averse decision-makers would take higher than optimal precaution in the light of uncertainties or risk-aversion is sometimes considered in case of potential errors in the liability attribution by courts, etc. However, the optimal precaution level under the tort liability standard itself is established on the risk-neutrality assumption. Consequently, in this analysis, we consider that the legal liability rule under the US ERISA FD is based on a risk-neutral formulation of optimal precautionary measures expected from a fiduciary to comply with her duties. This formulation also lies at the basis of the tort negligence-based liability under the trust fiduciary law. Simply saying, a fiduciary under the ERISA FD standard should adopt a risk-neutral (uncertainty-neutral) attitude in the process of definition of an optimal precautionary effort through a selection among the available precautionary measures (alternative risk management options) versus the basic option (Do nothing). We note that this also applies to the case when there exist an uncertainty on the subject of the effectiveness of an alternative action; in the selection of the optimal precautionary measure versus the basic option, this uncertainty is treated with a risk-neutral attitude. However, in order to provide a fiduciary with incentives for adoption of the efficient level of precaution, the enforcement tools associated with the tort liability standard, namely, the *alternative action test* of the pleading standard must impose the same precautionary standard. We will now explore the evidence from the Exxon litigation case to trace how the behaviour of the company in the face of a potentially material ESG risks was qualified by the court through the application of the *alternative action test (AAT).* We will attempt to establish what incentives for precaution in terms of a choice of action by a fiduciary against a material ESG risk are formulated under the AAT.

We remind that the *alternative action test* under the US ERISA was designed with the objective to prove in court that a fiduciary in the face of a risk of losses (stock drop) chose among all potential risk management actions the one, which aligns with the tort liability standard of optimal precaution. This is viable under the assumption that the ERISA ESOP pleading standard through the AAT provides incentives to adopt the optimal level of precaution (i.e. risk-neutral choice between available options of action) as established by the tort liability standard. We now

analyse whether this condition is met in the context of ERISA stock drop litigation through the study of the Exxon lawsuit.

In our litigation case, the Plaintiffs argued that several alternatives, including an option of earlier disclosure to assure a rapid and minor market price correction (stock drop), were possible in order to avoid losses associated with the material ESG risk. Therefore, during the legal procedure, the Judge, based on the information provided by the Plaintiffs and the Defendant, performed a comparison of expected outcomes of potential alternative options given the actual outcome of the option taken by Exxon, which was not to hedge the ESG risk. To allow this comparison, Judge Ellison following the doctrine of precedent relied on previous interpretations of the alternative action test (AAT). We note that the consideration in this case of an ESG risk was not in any way differentiated; the claim was treated under the same principles and with the same judicial instruments as any other ERISA ESOP stock drop case was or would have been. The main precedent used by the Judge to inform her judgment was the one that provided this fundamental principle of alternative action test through the decision by the US Supreme Court. Particularly, in 2014, the Supreme Court held in the *Firth Third Bancorp v. Dudenhoeffer* that, to state a claim in ERISA ESOP stock drop cases based on insider information (Exxon case), Plaintiffs must ***plausibly allege*** *an alternative action that the ERISA fiduciary could have taken that would have been consistent with the securities laws and that a prudent fiduciary in the same circumstances would not have viewed as more likely to harm the fund than to help it*[272]. Analysing the Supreme Court statement in search for a clue into the interpretation of the alternatives by judges under the ERISA pleading standard's AAT, a question of how the wording *plausibly allege* could be understood rises. We note that the Supreme Court does not provide in its decision a concrete interpretation of this wording, but formulates a global standard of qualification of fiduciaries' actions under the AAT. In the Exxon case, the Judge Ellison grounded her conclusion as regards the plausibility of the Plaintiffs' allegations on the reasoning inspired from another precedent – *Whitley v. BP* case. This precedent judicial decision proposed that a fiduciary should have weighted the likely harm of early disclosures against ***the chance*** that the disaster would arise absent precaution; ***the***

[272] *Dudenhoeffer*, 134 S. Ct. 2459, 2472 (2014). The *More harm than good* pleading standard used to identify a valid alternative action was discussed by the Supreme Court in *Fifth Third Bancorp v. Dudenhoeffer*, 573 U.S., 134 S. Ct. 2459 (2014). We present it here further in more detail.

chance that early disclosure would lead to take precaution; and ***the chance that the precaution action would then be successful*** in mitigating the potential risk of loss. We also note that in this precedent the claim was dismissed on the grounds that *nowhere do Plaintiffs plead **facts** from which the Court can conclude that **these odds were at all significant***[273]. The Judge Ellison in the Exxon case uses these very formulations provided by the judicial doctrine to qualify the alternative actions proposed by Plaintiffs versus the Do nothing option taken in reality by Exxon. Based on these elements she establishes that no available alternative was *plausibly alleged* and, thus, validates Exxon action and dismisses the case. However, we notice in these precedent formulations used by Judge Ellison to decide on the Exxon case that not only the judicial doctrine implies that there exists a high uncertainty about the alternative precautionary measure (the use of the word *chance* strongly indicates it), but it also seems to presuppose the non-success of such action. In this context, the alternative action test (AAT) is interpreted with a mistrust towards the efficiency and the effectiveness of a precautionary measure versus Do nothing option. Therefore, to pass the AAT and, by that to avoid dismissal, which will allow the claim move forward to the next stage of the trial where it will be analysed profoundly, Plaintiffs have to provide the Judge with indisputable evidence (*facts*) that the effectiveness of the alternative precautionary measure can be proven with a highly significant degree of certainty. Under this perspective, it seems that the court verifies the application of the optimal precaution within the AAT framework by valuing alternative actions versus Do nothing option with a quite averse attitude in the presence of uncertainty related to the effectiveness of such alternative actions.

There is another case that was used to a great extent by the Judge Ellison as a precedent reference in the Exxon case. This is the BP decision related to the BP stock drop provoked by an oil spill. This case provides judgement principles to apply while comparing possible alternative precautionary actions with the actual Do nothing action and its outcome. Namely, the case states: *the Plaintiffs theorized that a*

[273] *Whitley v. BP* P.L.C., 838 F. 3d, 529 (5th Cir. 2016). See also *In re BP P.L.C. Securities Litig., 2017 WL 914995 (S.D. Tex. Mar. 8, 2017), *6:*

Instead (of hindsight allegation of inevitability of a disaster*), a prudent fiduciary would have weighed the likely harm of a 3–5% decline in value against the chance that a Deepwater Horizon-type disaster would arise absent BP implementing OMS; the chance that early disclosure would lead BP to install OMS on remaining rigs in the Gulf; and the chance that OMS would then successfully avert or mitigate such a disaster.*

prudent fiduciary could not have concluded that a likely $66–110 million loss in value [as a result of a precaution] would harm the BP Stock Fund more than the possibility of BP installing OMS [i.e. taking precaution] would help it. The court disagrees with the Plaintiffs and wondering about ***the chance that OMS would successfully avert or mitigate the loss*** finds the proposed alternatives insufficient to state a claim[274]. The case was dismissed. This decision together with the similar decision in *Amgen, Inc. v. Harris*[275] provides guidance and a general principle concerning the interpretation of the alternative action test by the judicial doctrine. It confirms that *Dudenhoeffer* via the AAT imposes a significant burden of proof on Plaintiffs at the very first pleading stage that almost no claim can satisfy. Plaintiffs must allege *an alternative course of action so* ***clearly beneficial*** *that a prudent fiduciary* ***could not conclude*** *that it would be more likely to harm the fund than to help it* and ***offer facts*** *that would support such an allegation.* Once again, it appears that the likelihood for an alternative action to be efficient and effective in producing a concrete beneficial outcome is viewed by courts through the prism of risk-aversion.

In other words, the analysis of the Exxon case and of the relevant precedent decisions that structured the opinion of the Judge reveals a quite concrete logic in the qualification by the judicial doctrine of alternative actions. Namely, Exxon should have adopted an alternative precautionary measure, only if it could be plausibly stated, through the action examination in foresight, that Exxon could have concluded that, compared to the Do nothing option, this precautionary action would be more efficient for the fund given its effectiveness in terms of the likelihood to succeed in risk mitigating. We precise here that under the ERISA procedural law the comparison between the action options should be performed in foresight[276], i.e. on the basis of information and action options potentially available to a fiduciary before the occurrence of losses. In this situation, the actual loss caused by the Exxon's decision not to hedge the risk (Do nothing) serves as an indicative loss threshold. This means

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[274] *In re BP P.L.C. Securities Litig., 2017 WL 914995 (S.D. Tex. Mar. 8, 2017), *6*

[275] *Harris v. Amgen, Inc., 788 F. 3d 916, 925 (9th Cir. 2015), cert. granted, judgement rev'd, 136 S. Ct. 758 (2016)*

[276] With the objective to avoid misjudgement due to hindsight-related bias. For instance, *applied to accidents, the hindsight bias may cause courts to overestimate the effects of untaken precaution on the probability of accidents that actually occurred*. (…) *In general, the hindsight-probability is higher than the foresight-probability for events that materialize*. (*See* Cooter R. D., Ulen Th., *Law and Economics*, 6th Edition, Berkley Law Books, 2016, 570 p)

that the expected outcome of the potential alternative action are valued versus this threshold. Thus in order to prove the breach of his FD, they should offer lesser losses given the effectiveness of the alternative action in terms of the likelihood to succeed in risk mitigating. Therefore, the efficiency of a precautionary action is understood in terms of the expected benefits of the action (given its cost and potential negative side effects) with the consideration of its probability of success[277]. According to this rising principle, we clearly see that the assessment of benefits of an alternative precautionary action is directly related to the probability estimations of the success of this action – we here face a *precautionary uncertainty*. Consequently, in the Exxon case, the judge, while performing the AAT, valued in foresight the expected outcome of the Do Nothing option, which was not exposed to the precautionary uncertainty as it did not depend on the success or failure of hedging and was informed by the actual suffered loss. Then, she compared it with the expected (in foresight) outcome of the proposed alternative precautionary action with the consideration of the probability of its success (precautionary uncertainty). In this context, the potential ability of the proposed precautionary action to hedge the risk, i.e. to reduce harm by avoiding loss, in comparison with the certain outcome of Do Nothing option was judged by the court as implausible. The Exxon case was dismissed.

By performing this Case Study, we have noticed repeatedly that within the AAT framework the courts tend to require from Plaintiffs an excessive amount of evidentiary support and a highly significant degree of certainty as for the potential effectiveness of alternative actions. The judicial doctrine tightens the requirements for statements that an alternative hedging action could have been used by fiduciaries instead of Do Nothing option. Particularly, we see that the courts demand that a proposed *alternative course of action* would be ***so clearly beneficial*** *that a prudent fiduciary* ***could not conclude*** *that it would be more likely to harm the fund than to help it*. The courts also consider the chance of the action to be successful in risk mitigation and demand for it a highly significant level of likelihood. With such

[277] Judge Ellison in the case of Exxon quotes the reasoning used in *Whitley v. BP*, namely: Based on *In re BP P.L.C. Securities Litig., 2017 WL 914995 (S.D. Tex. Mar. 8, 2017)*, disclosing negative information "would likely have led to at least some negative effect on the price of" the relevant stock. *Id*. at *3. Disclosures by fiduciaries could "spook" the market. *Id*. at *5. The issue, then, is whether plaintiffs plausibly allege that no prudent fiduciary could have concluded "this negative effect would do more harm than any alleged benefit would do good." *Id*. at *3.

requirements the Plaintiffs' burden of proof becomes overly *significant*[278] testifying for a risk-averse attitude of the courts towards precautionary uncertainty in the qualification of potential effectiveness of alternative actions versus more sure Do Nothing options. Consequently, it is possible to state that the enforcement of the optimal precaution principle in court through the application of the AAT could be characterised by a risk-averse attitude towards precautionary uncertainty. It seems that this interpretation of the general principle of optimal precaution would not be aligned with the risk-neutral guidance provided by the tort liability standard under the US ERISA trust fiduciary law. Given the fact that the Exxon case of ESG risk management was treated exactly as any other ERISA ESOP stock drop case, with no differences, this interpretation could be generalised to explain why since the adoption in 2014 of the alternative action test (AAT) via the decision by the Supreme Court in *Fifth Third Bancorp. v. Dudenhoeffer,* only rare ERISA ESOP stock drop claims survived the motion to dismiss and continued to be treated in court after the first hearing. The standard of proof became practically insurmountable for Plaintiffs making it almost impossible to state a validity of an alternative precautionary measure versus Do nothing option. Consequently, today, it is almost impossible to state a breach by private pension scheme managers (in our case, Exxon) of their FD under the ERISA ESOP provisions. Already, bringing up the question of precautionary uncertainty within the liability standard hardens its requirements for Plaintiffs that need to provide extensive evidence of the existence of potential alternative actions; but treatment of claims by courts based on a risk-averse attitude hardens the standard even further and makes in our opinion ***this standard*** truly ***insurmountable***[279].

Thus, our Case Study brings us to the fundamental problem in the US ERISA litigation, which is equally true in case of investment and risk management decisions

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[278] Judge Ellison in the case of Exxon quoting the Firth Circuit in Whitley v. BP, P.L.C., 838 F.3d 523, 529 (5th Cir. 2016) which has clarified that the *plaintiffs' burden is significant*.

See *Fentress et al, v. Exxon, Civil action NO. 4:16-CV-3484, Memorandum and Order (S. D. Tex., Feb. 4, 2019*)

[279] *See Fentress et al, v. Exxon, Civil action NO. 4:16-CV-3484, Memorandum and Order (S. D. Tex., Feb. 4, 2019*) where Judge Ellison quotes *In re BP P.L.C. Securities Litig., 2017 WL 914995, at *3, *3 n.7 (S.D. Tex. Mar. 8, 2017): As this court wrote recently, the Court "is not aware of any post-Amgen case in which a plaintiff has met this significant burden." The standards is "virtually insurmountable". See also* **Chapter I** for extensive analysis and presentation of the issue.

by investors in the face of ESG risks and traditional financial risks. The precautionary uncertainty in terms of risk management action applied by an investor exists both in case of conventional financial management approaches and of sustainable investment strategies. Thus, this difficulty could be stated as common for any qualification of ERISA ESOP stock drop cases. To examine further the exposed problematics of *precautionary uncertainty* as well as to illustrate our statements on the limits of the current *risk-averse* interpretation of the pleading standard of ERISA ESOP stock drop cases by the judicial doctrine, we formalise our analysis in the following chapters using the tools of the theory of Law & Economics. For that, we continue the analysis of the decision-making system under the FD rule in the context of the theory of decision-making under uncertainty by treating this time the question of investors' liability and the level of precaution in relation to the effectiveness of material ESG risks management. We formalise the choice by investors of a risk management action in the face of an ESG risk and a further qualification of this action by the judge through the FD liability standard. Having found that this qualification is misaligned with the FD legal rule due to a risk-averse formulation of the liability standard applied by the judge (by the judicial doctrine), we then determine the social costs of this misalignment on different levels of the FD legal value chain (**Section 1**). We then attempt to provide a solution to this problem, by proposing possible legislative corrections to the ERISA ESOP pleading standard, namely to the AAT, with the objective to breach the *insurmountable* character of this standard and to align it with the principle of optimal precaution under the tort liability rule of the Trust Fiduciary Duty law (**Section 2**). We then conclude that our findings appear to be relevant for and applicable to all risk factors, ESG and conventional financial ones. By that, we respond to the second problematics identified in **Chapter I** of the thesis.

Thus, our research work contributes to the analysis of trust fiduciary duties from an angle of the alignment of regulatory and liability-related precautionary incentives. It particularly opens on such specific aspect of fiduciaries' decision-making as the uncertainty about the effectiveness of their risk management action – *precautionary uncertainty*. Our study is the first to raise and analyse the question of the importance of the effectiveness of a risk management action in the definition of ESG FD liability and regulation standards in the investors' ESG Fiduciary Duties research literature. We show that this subject being rarely considered as part of the

FD analysis, however, not only contributes to the definition of investors' liability under their FD, but also raises some general questions about the effectiveness of investors' risks management and the efficiency of the risk management regulation as applied to investors.

2. LAW & ECONOMICS OF US ERISA LIABILITY RULE UNDER PRECAUTIONARY UNCERTAINTY

Here, it is possible to say that the analysis continues within the same cognitive framework of decision-making as the one used for the materiality definition in **Chapter II** of the thesis, but now we focus specifically on the problem of precautionary uncertainty, i.e. a probability of success of an alternative precautionary action in comparison to Do nothing option. Therefore, we assume that the decision-maker has identified the material ESG risk and now proceeds to the choice of an action option in the face of this risk. However, she faces uncertainty about the success of the hedging action – precautionary uncertainty. Remember that our objective is to demonstrate what would be considered as an optimal action choice for a fiduciary in the presence of precautionary uncertainty under the FD tort liability law and then compare it to the optimal choice as formulated under the associated enforcement standard, namely the alternative action test (AAT). Here, we illustrate our hypothesis based on the Case Study observations that there exists a misalignment between these two standards, which could explain the insurmountable character of the AAT-related burden of proof. Therefore, we, first, reconstruct the proper choice of precautionary effort (in terms of a hedging action) by an investor as established by the legal standard of fiduciary liability, which is characterised by a risk-neutrality and, thus, sets incentives to optimal precaution. Then, we introduce risk-aversion in the definition of the precautionary standard as encouraged through the interpretation of the pleading standard by the US judicial doctrine and state consequences. Finally, we consider the social costs that could be attributed to the risk-averse definition of precautionary standard.

We base our analysis on the work of academics in several adjacent fields, starting from the general economic analysis of tort law and research on optimal liability rules (Landes et Posner (1980, 1987); Shavell (1980, 1982, 1987, 2007), Golding (1982), Ariel et Stein (2002), Franzoni (2015), Cooter et Ulen (2016), etc.). We also consider such specific fields as the analysis of standards of proof in tort litigation (Katz (1988), Demougin et Fluet (2008), etc.). More particularly, the risk-aversion assumption is examined in the context of liability regimes by Privileggi et al. (2001), Nell and Ritcher (2003), Zivin et al. (2005), Lee (2014, 2015), Franzoni

(2014) and others. These papers study liability rules with risk-averse individuals under various liability regimes. Cooter & Ulen (2016, Ch. 7) directly introduce the question of different incentives set by regulation and associated liability regimes, illustrating that the divergence in incentives set by different standard may cause sub-optimal precautionary effort by potential injurers. We also relied on some academic works on procedural rules and the role of dismissals in litigation. Particularly, we consider the model provided by Hylton (2008), which presents an analytical framework to determine at what stage of a trial a claim is better to be dismissed (pleading or summary judgment). A small literature directly covers questions related to ERISA law and associated liability systems. Post-*Dudenhoeffer* ERISA requirements are namely studied by Halwani (2016), Grosbard (2017). The general overview of the fiduciary requirements under ERISA in the context of uncertainty is provided by Maher and Stris (2010). Particularly, they argue that there is a need for structural reform of ERISA.

Our work being grounded on this literature, contributes particularly to the analysis of trust fiduciary duties from an angle of the alignment of regulatory and liability-related precautionary incentives, by opening on such particular aspect of fiduciaries' decision-making as the uncertainty about the effectiveness of their action – precautionary uncertainty.

2.1. Risk Attitude and Legal Incentives to ESG Risk Hedging

To concentrate the attention on the problem of choice between the Do nothing option and an uncertain alternative precautionary action, we apply an analysis based on the analytical framework proposed by Louis Eeckhoudt (2002). Eeckhoudt worked mostly on the problems of medical decision-making under uncertainty; but even if this field does not correspond to the domain of our study – investment and risks management decision-making under the FD obligation of investors, we find his logic relevant and applicable to our specific question. We thus adapt his model of medical decision-making to our problem. The analysis also took inspiration in the adaptation of the model by Eeckhoudt by L. Berger et al. (2013), which also considers medical decision-making issues. We adapt the reasoning by Berger to our problem and use his work to inform our research. These models, which at first glance

do not correspond to the question we ask in our research, provide nevertheless a relevant basis for construction of our analytical model. We remind that given the fact that the current literature on the ESG FD concept does not contain propositions of its theoretical modelling, we chose quite freely among a wide variety of representations of decision-making in different fields. Particularly, the models by Eeckhoudt (2002) and Berger (2013) were chosen for their perspicuous and illustrative qualities as well as for their suitability to the case under analysis (i.e. their decision-making pattern is pertinent for the analysis of our case).

As it was stated earlier, here, we consider that a risk faced by a fiduciary has been identified as material[280]. In this context, the uncertainty arises from another element – the effectiveness of ESG risks management strategies and their capacities to hedge these risks. We also remind that according to the requirements of the ERISA pleading standard, the assessment of alternatives and the decision-making process by a fiduciary is based on priors (is performed in foresight), not posteriors (not in hindsight). Therefore, we can state that in the absence of hedging (Do nothing option), the expected outcome (in terms of loss) that is identified and related to an ESG risk factor can be denoted as O^{NH} (No Hedging). On the other hand, if a fiduciary choses to hedge the risk, the effects and, in general, the success of such hedging action are uncertain. For simplicity, let O^{H+} and O^{H-} denote the eventual loss if a hedging (precautionary) action is a success and a failure respectively. Generally, in the face of these options we assume that $O^{H-} < O^{NH} < O^{H+}$. This means that a successful precautionary action avoids the total loss attributed to the realisation of the risk, however, if a precautionary action is a failure, the total loss is bigger than in case of Do Nothing option (No Hedging) as some negative effects in terms of additional drop in stock prices may occur.

The given setting implies that a fiduciary is uncertain about the success of hedging; thus, her decision tree can be represented in the following way:

[280] In the materiality definition framework we consider that an optimal action taken based on exposure to an ESG risk is successful, meaning that the risk (and the corresponding loss) is avoided completely. In this case, no uncertainty about the success of the action is considered. *See* **Chapter II** on the subject of materiality of ESG risks.

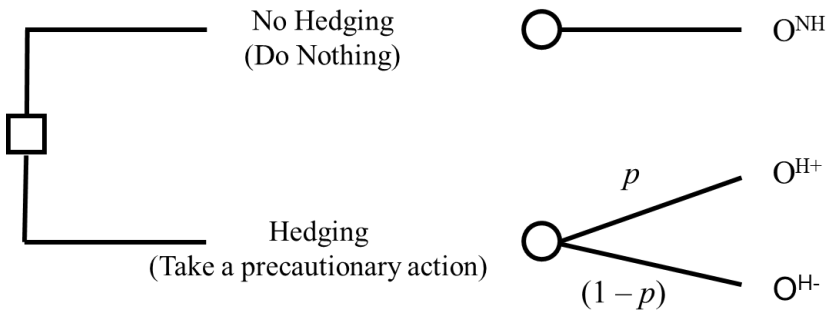

Figure 1. The decision tree of a fiduciary facing precautionary uncertainty (i.e. a risk of failure of a hedging (precautionary) action).

Here (**Figure 1**), p represents the probability of success of a precautionary action and $(1 - p)$ is the probability of failure of hedging; these are two mutually exclusive events. At this stage, the cost of a hedging action is not considered or could be assumed to be zero. Based on this global setting, we now continue with the formulation of a fiduciary's choice among precautionary actions in the presence of precautionary uncertainty under the tort liability law.

2.1.1. Tort Liability Standard of Optimal Precaution and Fiduciary's Decision to Hedge

As it was stated before, we are trying to reconstruct the optimal precautionary incentive provided by the legal framework of ERISA FD tort liability standard. As we stated earlier, traditionally, at the basis of the optimal level of care definition lies an assumption of a risk-neutral formulation of this optimum. Based on this, here, we will show the risk-neutral structure of the optimal precautionary incentive of the ERISA FD liability law through modelling of the expected decision-making by a fiduciary under this incentive in the presence of precautionary uncertainty. Once again, we assume that, by definition, the outcome of this decision-making would correspond to the optimal level of precaution as incentivised by the trust fiduciary law. The FD is considered to be formulated with a risk-neutral attitude towards precautionary uncertainty and allows for optimal precaution, i.e. optimal choice of a risk hedging action by a fiduciary.

According to the basic decision-making model in compliance with the proposed setting stated above, a fiduciary acting under the (risk-neutral) ERISA tort liability standard is expected to calculate the expected utility of a possible hedging action in the following way:

$$EU^{H} = p\ U\ (O^{H+}) + (1 - p)\ U\ (O^{H-})$$

In its turn, and considering that the source of uncertainty is a potential effectiveness of a chosen hedging action (i.e. precautionary uncertainty), the expected utility of Do Nothing option does not involve a probabilistic element, and, consequently, is presented as:

$$EU^{NH} = U\ (O^{NH})$$

Based on this, we then consider a probability $\bar{p}$ at which, a risk-neutral fiduciary in compliance with the liability standard is indifferent between the outcome of a Hedging action and the outcome of No Hedging option (Do nothing):

$$U\ (O^{NH}) = \bar{p}\ U\ (O^{H+}) + (1 - \bar{p})\ U\ (O^{H-})$$

This brings us to the conclusion that Hedging will be applied by a fiduciary whenever $U\ (O^{NH}) < \bar{p}\ U\ (O^{H+}) + (1 - \bar{p})\ U\ (O^{H-})$, and the decision-making process of a risk-neutral fiduciary, thus, would look as follows:

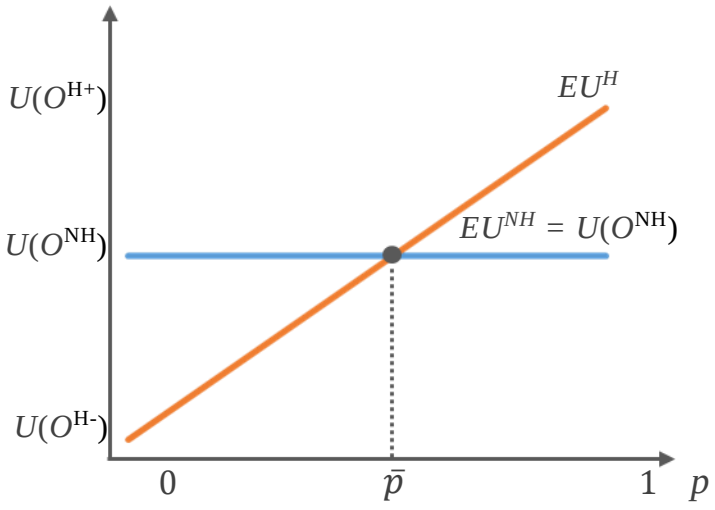

Figure 2. Expected utility of Hedging versus Do Nothing option and the threshold probabilities for precautionary uncertainty.

The **Figure 2** illustrates the expected utility of Hedging as a function of the success rate of a precautionary (Hedging) action *(p)*. Specifically, the horizontal line EU^{NH} expresses the expected utility of No Hedging option, which being independent of *p* (the rate of success of a precautionary action) remains constant and equals to $U(O^{NH})$, which in its turn equals to O^{NH} for a risk-neutral decision-maker. The inclined line EU^{H} shows the expected utility of an uncertain alternative precautionary (Hedging) action, which increases with the probability of its success *(p)*. It is explicitly depicted in the graph that for the probability rate $\bar{p}$ a risk-neutral trustee is indifferent between the Hedging option and the Do Nothing option, which means that the precautionary action will be taken by a fiduciary whenever its probability of success exceeds $\bar{p}$.

By that, we demonstrate investors' behaviour as incentivised by the FD regulation and the associated optimal tort negligence-based liability standard. This decision-making system thus corresponds to the structure of the optimal level of precaution expected under the ERISA liability standard. Otherwise saying, this is the amount of precautionary effort that a fiduciary is assumed to be obliged to produce in order to comply with the law. Therefore, the pleading standard oriented to enforce the optimal liability standard established by the legal FD rule in court would also invite fiduciaries to a risk-neutral appreciation of the precautionary uncertainty by stimulating risk management when $\boldsymbol{p > \bar{p}}$. Such pleading standard would thus let the claims targeting No Hedging actions by fiduciaries at the rate $\boldsymbol{p > \bar{p}}$ to survive a motion to dismiss and to engage in further judicial proceedings aiming to prove the breach of their FD.

2.1.2. ERISA Pleading Standard and Risk Aversion Effect on Fiduciary's Decision to Hedge

We now consider the same decision making process (choice between Hedging and Do Nothing options) in the light of the ERISA pleading standard and the alternative action test (AAT) developed by the US Supreme Court to state the breach of FD specifically in ERISA ESOPs stock drop cases based on insider information (case of Exxon litigation). We already provided evidence earlier that US judicial doctrine tends to consider alternative options in the AAT of the related ERISA

pleading standard with a risk-averse attitude. The suspicion with which potential alternative precautionary actions are considered by judges (agents of justice) under the ERISA pleading standard supports the hypothesis of the risk-averse interpretation of this standard within the judicial doctrine. This seems to explain in many ways why this pleading standard is currently widely considered as *Defendant-friendly* (*Fiduciary-friendly*) and, thus, insurmountable for Plaintiffs. Once again, based on the work by Eeckhoudt (2002) and Berger et al. (2013), we illustrate in a simple and explicit way the implications of such risk-averse interpretation of the optimal precautionary effort under the ERISA pleading standard on an investment and risk management decision by a fiduciary.

Coming back to the earlier defined general decision-making framework, we now state that the pleading standard implies that a Hedging decision should be taken based on a risk-averse attitude (ceteris paribus). Simply saying, to comply with the standard of precaution provided by the ERISA pleading standard, we assume that fiduciaries analyse alternatives versus Do Nothing option with a risk-averse attitude. In this case, Hedging is not eagerly chosen by a risk-averse fiduciary as this option is associated with precautionary uncertainty. On the contrary, the Do Nothing option seems more credible (as it does not depend on the probability of success of a precautionary action) and, thus, seems to be more attractive.

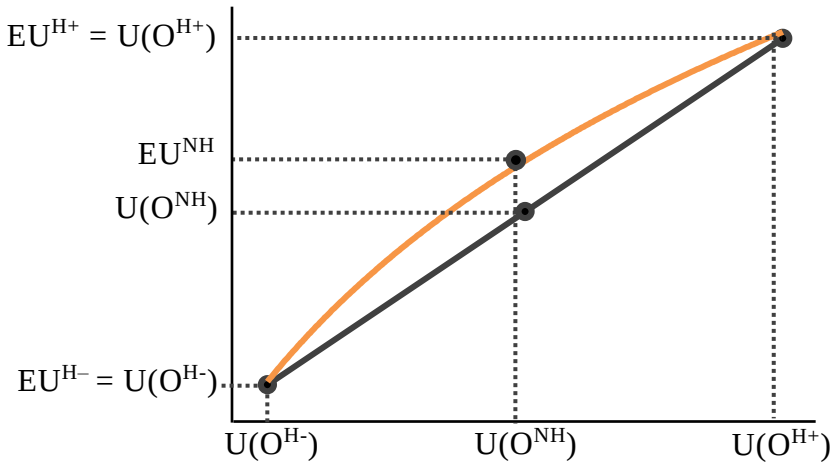

Figure 3. Risk Aversion effect in the presence of precautionary uncertainty.

Risk-aversion is represented in **Figure 3** through the concavity of the U-function, which implies an increase in the benefits of the Do Nothing option as the most certain one (EU (O^{NH}) > U (O^{NH})), while the benefits of taking a precautionary action in the presence of precautionary uncertainty remain stable (in comparison to the risk-neutral tort liability standard framework). Without loss of generality, it is possible to scale U-function such that the minimum and the maximum outcome values U^{H-} and U^{H+} are equal to the expected value of outcomes O^{H-} and O^{H+}; this scaling is possible due to the uniqueness properties of the U-function. As risk-aversion implies that a fiduciary prefers the less risky Do Nothing option than an uncertain act of risk mitigation (hedging action), we state the transformation in the **Figure 2**, expressed in **Figure 4**. The value of the Do Nothing option progresses upwards provoking the change in the value of the probability threshold $\bar{p}$ for the risk-averse fiduciary. This means that a higher probability of success of an alternative action is now required by the fiduciary to choose an action of hedging (precautionary action). A risk-averse fiduciary wants to be more certain of the success of an alternative action. Therefore, she will now be indifferent between the Do Nothing option and the alternative precautionary action for a higher success rate ($\tilde{p}$) of the latter.

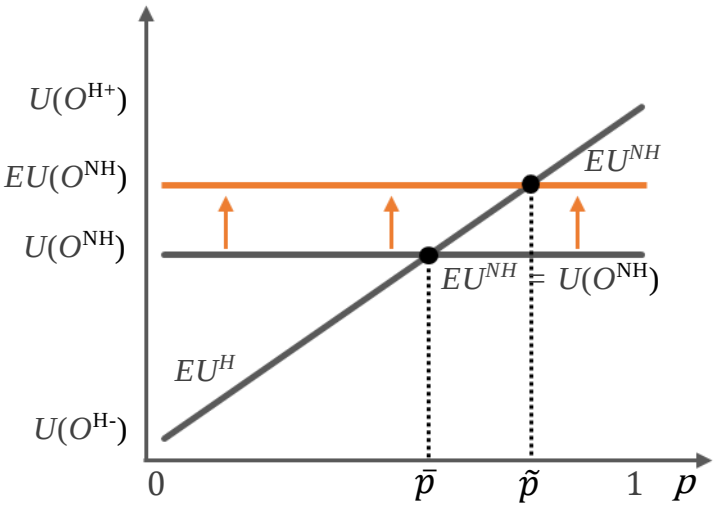

Figure 4. Averse Risk Attitude and its effect on the choice of Hedging.

Figure 4 shows that precautionary uncertainty makes the Do nothing option look more attractive for a risk-averse trustee; meaning that she would now require a success of the alternative action to be more certain. This is understood from the

change in the success rate for which a risk-averse fiduciary is indifferent between taking a precaution and doing nothing. Otherwise saying, because a risk-averse fiduciary is less comfortable with uncertainty, she prefers an uncertain hedging action to the Do Nothing option more difficultly. This implies the need for a higher probability of success of the precautionary measure so that a fiduciary finally prefers the hedging option.

By that, we demonstrate the investors' behaviour as incentivised by the ERISA judicial doctrine through the application of the ERISA pleading standard via its alternative action test (AAT). We see that the incentives related to the amount of precaution to take by an investor are different under the FD tort liability standard and the enforcement instrument – the ERISA pleading standard and its AAT. The ERISA pleading standard allows for less precaution to be taken by a fiduciary in the presence of precautionary uncertainty. As we stated earlier, such misalignment of incentives could be a source of inefficient behaviour by fiduciaries in terms of potential mismanagement of investment schemes and, thus, may give rise to social costs. This particular problematics is considered in the following Chapter.

2.2. Social Costs of Aversion to Precautionary Uncertainty

Following our reasoning, we are questioning what the stated misalignment between the interpretation of the optimal precautionary behaviour by fiduciaries under the ERISA FD tort liability rule and the associated enforcement tools, i.e. the ERISA pleading standard and its alternative action test (AAT), would imply in terms of potential social costs. As we have seen, the pleading standard, which is not oriented to support the optimal standard of care established by the FD tort liability rule, would invite fiduciaries to adopt precautionary measures less often by encouraging them to choose the more certain Do nothing option in the face of a risk. Here, we identify three types of social costs that this situation potentially generates.

2.2.1. Sub-optimal Precaution and Avoided Liability (Inefficiencies related to the social costs of accidents)

Given the assumption that the optimal precaution is considered to be established by the risk-neutral tort liability standard, we assume that a pleading standard, which would be oriented to support such incentives to optimal precaution, would also imply a risk-neutral appreciation of precautionary uncertainties concerning possible hedging solutions. The two standards would thus stimulate the same action choice by an investor; they will be aligned. Consequently, it is natural to assume that a risk-averse attitude in determining the optimal level of precaution could lead to inefficient incentives and understated (sub-optimal) precautionary standard failing to fulfil its general objective, which is to minimise social costs of accidents. The ERISA pleading standard orders claims dismissals, thus, contributing to fiduciaries' liability qualification under the legal standard of negligence-based liability (assuming that the legal standard is optimal). In this context, only the cases, which demonstrate a breach of the optimal precaution standard defined by the liability rule, should survive the motion to dismiss and continue to further stages of a trial.

However, when the formulation of the optimal precaution level within the pleading standard differs from the one defined by the legal rule of liability, the pleading standard can negatively affect the qualification of liability. In our case, as we showed earlier, a lower level of precaution is demanded by the ERISA pleading standard to avoid liability in comparison to the ERISA FD liability rule. In other words, a risk exists under such pleading standard to dismiss the claims that state an actual non-respect of the optimum precaution set by the legal rule. Or, saying it differently, a risk exists that under such pleading standard a court systematically would not qualify a breach of the FD where according to the legal rule such breach could be stated and, thus, would systematically dismiss claims. To illustrate this statement let us compare the optimal level of precaution as defined in the common risk-neutral tort negligence-based liability model lying at the basis of the ERISA trust fiduciary provisions with the *optimal* level of precaution promoted by the risk-averse pleading standard under the US ERISA.

In the previous part of the analysis where we discussed the influence of a risk-averse attitude on a decision to take a precaution (to hedge) in the face of a material risk, the cost of hedging was assumed to be zero. We saw that a hedging action will be chosen when the probability of its success is sufficiently high. Following these statements, it is now possible to assume that when the threshold probability of success of hedging is attained, the utility of avoiding the total loss related to a material risk will still be bigger than the utility of Doing Nothing even after considering of the cost of hedging. However, in this case, there are limits to what can be defined as the maximum accepted cost in relation to the benefit procured by hedging, as when the cost becomes too important, the Do Nothing option is immediately chosen by a fiduciary. Berger et al. (2013) use the same reasoning (adapted for the ambiguity attitudes) and illustrate this idea by defining the demand for an *action* as a function of its cost, as it is generally assumed in studies on precaution and liability. As follows, the accepted cost would be limited and defined within the framework of the optimal precaution incentives established by the legal liability rule, the objective of which is to minimize social costs of incidents. The consideration of costs allows us to put this case naturally within the perspective of optimal precaution assessment under the negligence-based tort liability rule. This reasoning brings us to the traditional analysis of the optimality of precaution within the tort liability framework – which is risk-neutral.

Therefore, within this framework a fiduciary is motivated to engage precautionary measures if their associated benefits in terms of avoided loss are bigger than the cost of a precautionary action. More precisely, the amount of her effort in terms of precaution will correspond exactly to the level at which the marginal benefit of precaution in terms of reducing the probability of harm (avoiding loss) will be equal to the marginal cost of taking this precaution – this will define the optimal level of precaution $\bar{x}$. We can thus assume that the maximum cost that a rational fiduciary will accept to pay under the risk-neutral liability standard would correspond to the value of the cost at which the optimal precaution level $\bar{x}$ is reached, i.e. $\bar{c}$. Thereby, if the success rate of the hedging action is sufficiently high, a risk-neutral trustee will agree to pay the corresponding cost $\bar{c}$ for the corresponding optimal precautionary action $\bar{x}$ (i.e. the values of c and x at which the marginal cost of precaution is equal to its marginal benefit). This choice is encouraged by the

traditional risk-neutral liability standard under the ERISA FD regime. The general representation of this reasoning is proposed in **Figure 5**.

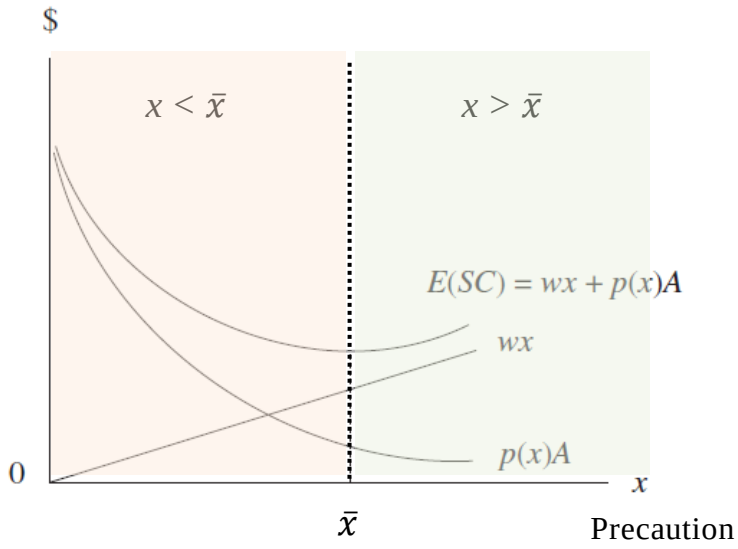

Figure 5. Here, we reproduce the traditional representation of the legal standard of continuous precaution. The expected social costs of accidents shown as the sum of precautionary costs and the expected cost of harm. Point $\bar{x}$ represents the optimal precaution level where the marginal social cost of precaution equals to the associated marginal social benefit. All precautionary efforts below $\bar{x}$ can be considered as a breach of the FD. (The general representation was borrowed from Cooter & Ulen, 2016, Chap. 6, page 200.)

Now, consider the ERISA pleading standard, which implies an aversion to the precautionary uncertainty and which defines the optimal level of precautionary measures through the prism of this risk attitude. In general, as we have previously seen, the risk-averse attitude makes the hedging option less attractive for a fiduciary, meaning that the propensity to choose the precautionary action option declines. As a result, the maximum accepted cost for a precautionary action that corresponds to the optimal under the risk-neutral legal rule ($\bar{x}$) will drop for a risk-averse trustee from $\bar{c}$ to $\tilde{c}$. This will move the optimal precaution level to the left-hand area where the marginal benefit of precaution will be higher that its marginal cost to cover the risk related to precaution. In other words, a fiduciary motivated by the risk-averse ERISA pleading standard will be stimulated to look for a *risk premium* by engaging less cost for higher precautionary benefits (in marginal terms). Putting it differently, facing the

cost of precaution (that is assumed to be known), a fiduciary will expect higher benefits associated with a precautionary action meaning that she will value the marginal precautionary benefit at point $\bar{x}$ as insufficient to cover the corresponding marginal social cost $\bar{c}$). This implies that the new equilibrium will be established in the left-hand area of the graph in **Figure 5**, with the new optimal level of precaution $\tilde{x}$, where a fiduciary oriented by the risk-averse ERISA pleading standard would look for the marginal benefit of uncertain precaution to be sufficiently higher than its marginal cost. This level of precaution is however seen to be sub-optimal as in the presence of a precautionary uncertainty such risk-averse interpretation of the optimal precaution standard allows for less precaution to be taken that it is actually defined by the tort liability rule. This implies some unavoidable undesirable social costs. We demonstrate this logic in **Figure 6**.

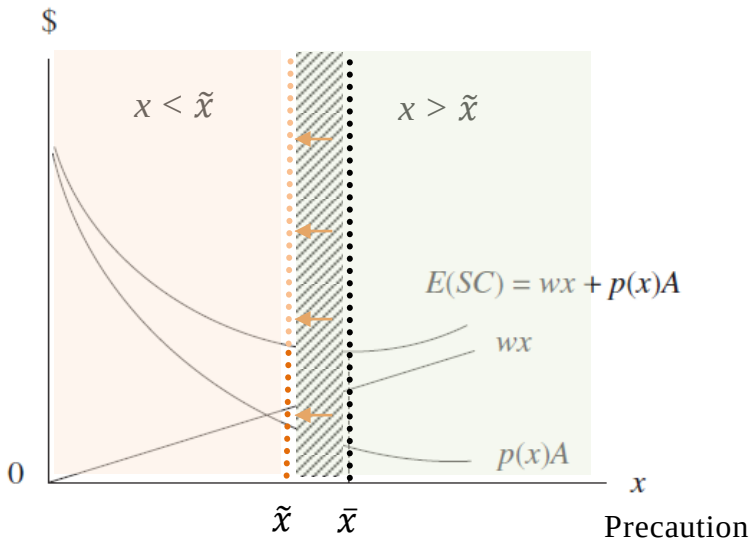

Figure 6. Here, we show the change in the optimal precaution incentive as produced by its risk-averse interpretation within the framework of the ERISA judicial doctrine. The shaded area corresponds to the amount of precaution (values of *x*), which is considered to constitute a breach of the FD under the ERISA FD tort liability law but which is not recognised under the lower precaution requirements of the risk-averse ERISA pleading standard. This difference implies some inevitable social costs. (The general representation was borrowed from Cooter & Ulen, 2016, Chap. 6, page 200.)

The two variables $\bar{x}$ and $\tilde{x}$ introduce the two standards of optimal precaution established by the risk-neutral liability standard under ERISA trust fiduciary law and the risk-averse pleading standard and its alternative action test (AAT) provided by the judicial system (we remind that this is true particularly for the particular field of ERISA ESOPs stock drop cases based on insider information[281]). What can be understood from the **Figure 6** is that both these legal tools under the ERISA legal regime (the tort liability rule and the pleading standard) contribute to the formulation of the optimal precaution standard; however, they send different incentives in terms of compliance requirements, namely the level of precaution to adopt by investors. Namely, the risk-neutral FD liability rule implies that the optimal precaution or hedging action that is to be assured by investors given the general objective of the liability standard to minimise the social costs of accidents corresponds to ($\bar{x}$). On the other hand, the risk-averse pleading standard invites the same agents to take $\tilde{x}$ amount of precaution. Being able to avoid liability at a lesser cost by complying with the less stringent pleading standard, investors naturally choose less often risk hedging measures in the presence of precautionary uncertainty. Moreover, this allows that the cost related to some accidents that should be internalised by fiduciaries under the trust fiduciary law would not to be considered by them due to the fact that the related claims would be dismissed under the pleading standard. This means that some mismanagement actions by fiduciaries would happen even if they could be avoided at a lesser cost.

Based on this analysis, it can be argued that the ERISA pleading standard being misaligned with the legal rule of liability invites fiduciaries to take a sub-optimal precaution what, as a consequence, generates social costs. At the same time, as the ERISA pleading standard plays the utmost importance for a claim survival in litigation, not only it strongly contributes to the actual qualification of liability principle, but also to the proper functioning of the litigation system. Given its sub-optimal formulation, this pleading standard would allow for some potential FD breaches not reaching the court. As a result, it is possible to state that besides the stated inefficiencies in minimising of the social costs of accidents, this pleading standard would also be inefficient in minimizing social costs of litigation itself, which is the general goal attributed to the pleading standard as a procedural law tool.

[281] *See* the presentation of the case earlier in this **Chapter III** as well as in **Chapter I** of the thesis.

Particularly, by inviting fiduciaries not to respect their FD in compliance with the tort liability law, the pleading standard produces under-deterrence effects. This will be demonstrated more thoroughly in the following section.

2.2.2. Sub-Optimal Litigation and Undesirable Dismissals (Inefficiencies related to the social costs of litigation)

The pleading standard plays the utmost importance for a claim survival in litigation; its general objective is to guarantee the optimal functioning of the litigation system by reducing its costs due to dismissing *low-merit* claims (the term will be explained hereafter). As we stated before, in the case under discussion and according to our analysis, under-deterrence within the litigation system occurs because the ERISA pleading standard stimulates fiduciaries to adopt lower precaution measures than the legal liability rule factually requires. Consequently, the pleading standard allows trustees not to comply, to some degree, with the optimal precaution standard under the FD rule. Or, saying it differently, a fiduciary who does not comply with the tort liability standard of optimal precaution can still avoid her liability in court by complying to the lower precautionary standard set by the pleading standard; the litigation system based on this pleading standard is thus presents under-deterrence bias.

From the previous conclusion, it follows that the ERISA pleading standard sends a poor incentive to comply with the liability rule as it implies a risk-averse attitude towards the precautionary uncertainty. Simply saying, the ERISA pleading standard allows for less precaution (versus the optimum level of precaution as defined by the risk-neutral legal standard) to be taken by a fiduciary without being found liable for the breach of her fiduciary duty. Naturally, and as it is stated by Hylton (2008), such pleading standard would lead to a quite low rate of compliance with the law. To illustrate this, we turn to the model introduced by Keith N. Hylton (2008) and used by him in his formulation of the optimal dismissals policy, in the analysis of pleading standards and their primary function in litigation – claims dismissals. First, following Hylton's reasoning and considering the standard model of

litigation[282], we describe the role of the pleading standard-based dismissal decisions in the general litigation system by specifying the goal of legal procedure[283]. By introducing the concept of the goal of civil legal procedure, it is possible to formulate a contribution of the claims dismissals to social welfare and to determine the optimal dismissal policy under the optimal conditions (i.e. in relation to the optimal liability rule aligned with the optimal tort liability of negligence standard of precaution). From the social welfare perspective, the goal of civil procedure should be to encourage litigation only when it is socially desirable. Considering the work of Shavell (1982), Hylton (1990, 2008) and others, a suit is socially desirable when the expected *deterrence benefits* (harm or loss avoided net of avoidance costs) exceed the expected litigation costs. Otherwise saying, the optimal civil procedure policy within the litigation system would seek to minimise the sum of deterrence bias (under- and over- deterrence)[284] and litigation costs. Given that, a particular attention in our analysis is being paid to the deterrence and possible related bias. But, before passing to the earlier stated potential under-deterrence case, let us complete the analytical framework by presenting the optimal procedural rules of dismissal. To do this, let us consider:

c as the cost of compliance per dollar of damage, (c is a random variable distributed according to the cumulative distribution function C);

θ_c and θ_{nc} as the probability that harm occurs when a potential defendant does or does not take due precaution according to the established optimal liability standard respectively (simply saying, a Defendant complies or does not comply with the law);

---

[282] Standard model of litigation implies that **a suit is filed if the expected judgment outcome exceeds the cost of litigation**. The standard model does not incorporate dismissal of lawsuits. The standard model is a one period model that focuses on the filing and settlement decisions. If P_p is the plaintiff's prediction of success and y_p is the ratio of the plaintiff's litigation cost to the damage award, then a lawsuit will be filed when $P_p > y_p$. This can be understood as saying that a suit will be filed when the plaintiff's prediction of success exceeds the ratio of his cost of litigation to his damages. (*See* Hylton, 2008).

[283] We consider the economics of civil procedure only.

[284] Over-deterrence and under-deterrence could be considered equivalent respectively to false-conviction and false-acquittal decisions by the judge at the first stage of the civil procedure. (*See* Hylton, 2008)

γ as the sum of two ratios γ_d and γ_p that represent the ratio of the litigation costs to the damage award for a Defendant and a Plaintiff respectively, i.e. $\gamma = \gamma_p + \gamma_d$;

and w as the percentage of potential injurers who take due precaution according to the established optimal liability standard because of the threat of being held liable in court for non-compliance. The variable w defined by Hylton (2008) as a compliance probability or a rate of compliance represents the deterrence level produced by the procedural policy within the litigation system. This rate should be sufficiently high to allow an optimal deterrence level (minimising deterrence bias) given the cost of litigation.

Consequently, and as variables c, θ_{nc}, θ_c , γ_p, γ_d, are fixed in this analysis, the procedural rules of dismissal, namely the pleading standard, are viewed to influence the social benefit from litigation mostly by supporting or contradicting the optimal rate of compliance w. This supposes that an optimal pleading standard should support a compliance equilibrium where[285]

$$w > \frac{\theta_{nc}\,\gamma}{((\theta_{nc} - \theta_c)\,(1 + \gamma) - c)}$$

More precisely, the optimal pleading standard should allow dismissals for all claims that fall below the threshold as such lawsuits would not enhance social welfare:

$$\bar{w} = \frac{\theta_{nc}\,\gamma}{((\theta_{nc} - \theta_c)\,(1 + \gamma) - c)}$$

[285] Hylton (2008) arrives to this formulation by specifying the goal of procedure. The author states that in case of prohibition of lawsuits, no one complies what brings the total social cost (under the assumption that the damage amount is equal to 1) is represented by θ_{nc}. On the other hand, when lawsuits are permitted, the fraction of potential injurers comply and the social cost is equal to $(1\text{-w})\theta_{nc} + w(\theta_c + c) + [(1\text{-w})\,\theta_{nc} + w\,\theta_c](\gamma_p + \gamma_d)$. Then a lawsuit is socially desirable if $w\,[(\theta_{nc} - \theta_c) - c] > [(1\text{-w})\,\theta_{nc} + w\theta_c](\gamma_p + \gamma_d)$. This means that suits are socially desirable when the expected deterrence benefits exceed the expected litigation costs. By that, the author arrives towards the definition of the stated compliance equilibrium.

$\bar{w}$ denotes the threshold formulated within the assumption that the compliance signal of the pleading standard is in complete accordance with the compliance signal of the liability standard of optimal precaution. In this case, the pleading standard would allow an optimal qualification of liability in accordance with the law and, thus would sift out claims that do not reach the defined threshold of compliance rate. The defined threshold is thus considered to be efficient to procure social welfare by minimizing the social costs of litigation through the dismissals function of the pleading standard. By defining this threshold, it is possible to filter lawsuits according to their so-called *merit* and to dismiss the low-merit ones (under the threshold). However, what will be the effect of the presence of deterrence bias on the merit of claims and the capacity of the pleading standard to identify lawsuits to be dismissed? To study that, we need to define $\bar{w}$.

First of all, we will set $\bar{w}$ using Hylton's (2008) definition of the optimal dismissal policy that would respect the goal of procedural rules in terms of dismissing claims that fall below the threshold with the objective to support compliance equilibrium and by that to enhance social welfare. For that, we consider:

r_{nc} and r_c that are probabilities for a Defendant of being held liable if she respectively does not comply or complies with the established optimal liability standard and

s_{nc} and s_c that represent the share of a Defendant's expenses of litigating to judgement borne if she respectively does not comply or complies with the established optimal liability standard.

Based on this, the threshold $\bar{w}$ can be defined as:

$$\bar{w} = C\left((\theta_{nc}\,\bar{r}_{nc} - \theta_c\,\bar{r}_c) + (\theta_{nc}\,\bar{s}_{nc} - \theta_c\,\bar{s}_c)\,\gamma_d\right),$$

Where $\bar{r}_{nc}$, $\bar{r}_c$, $\bar{s}_{nc}$ and $\bar{s}_c$ are the values corresponding to the threshold level established within the assumption that the compliance signal of the pleading standard is in complete accordance with the compliance signal of the liability standard of optimal precaution (remember that all other variables are fixed in this model). This means, that any value of any of these variables that falls below the the threshold (all other variables held constant) would imply a dismissal decision for the corresponding

lawsuit as its continuance in court (litigation) would not procure social welfare. We can thus rewrite the dismissal threshold as:

$$C((\theta_{nc}\,\bar{r}_{nc} - \theta_c\,\bar{r}_c) + (\theta_{nc}\,\bar{s}_{nc} - \theta_c\,\bar{s}_c)\,\gamma d) = \frac{\theta_{nc}\,\gamma}{((\theta_{nc} - \theta_c)\,(1 + \gamma) - c)}$$

This is the situation when the pleading standard totally supports the liability rule and sends the same signal in terms of optimal precaution. This creates a strong incentive for fiduciaries to comply as, if not, there is a high probability that they will be held liable for a breach of their FD. Generally, procedural rules that support compliance incentives can enhance the economic benefits provided by litigation. The optimal dismissal policy is based on the existence of the optimal liability standard. However, once the pleading standard sends a different from the liability standard signal to economic agents about the optimal precaution to take, it leads to an inefficient dismissal policy.

To illustrate this relation, we now come back to our case where the ERISA pleading standard implying risk-averse attitude in the definition of the optimal precaution *misinforms* (to a certain degree) fiduciaries about the level of precaution to adopt, thus, deviating their precautionary effort from the optimal one required by the risk-neutral legal standard of liability. Within this framework, we assume that r_c as well as s_c would have the same values as in the definition of $\overline{w}$ (with the value of r_c being insignificant, i.e. tending towards zero). Consequently, $r_c \approx \bar{r}_c$ and $s_c \approx \bar{s}_c$. However, what changes when the precaution incentive of the pleading standard does not correspond to the optimal one emitted by the liability rule are the value of r_{nc} and, consequently, of s_{nc}. As it was said, since the ERISA pleading standard allows for a different interpretation of the optimal precaution, fiduciaries would apply a sub-optimal precaution and, in some cases, would still escape liability. In other words, when the pleading standard sets an incentive to sub-optimal precaution, the probability of being held liable for not taking the optimal precaution (r_{nc}) under the liability rule declines drastically as well as the Defendant's share of litigation expenses s_{nc}. As a result, the percentage of potential Defendants who would take precaution because of the threat of liability w for an important fraction of such cases

would be seen as insufficient to cross the threshold $\overline{w}$ (as for the optimal dismissal policy with the threshold $\overline{w}$, the value of $\bar{r}_{nc}$ is expected to be quite high and tend towards unity). This means that the courts are expected to systematically qualify a fraction of lawsuits, which would fall below $\overline{w}$ due to the risk-averse bias of the pleading standard, as *low merit* and, thus, subject to dismissal (what they would not do if the pleading standard and the tort liability law were aligned on the definition of the optimal precaution). As *early dismissals, by eliminating low-merit claims before they become costly, offer benefits to society in comparison to late dismissals*[286] these *mispriced* claims would not be allowed to continue to a trial. This explains a quite low probability for Plaintiffs to win ERISA ESOP stock drop cases admitted and emphasised by many of the US legal professionals[287]. The pleading standard in case of ERISA ESOPs stock drop insider information claims is, thus, considered ***insurmountable***.

The sub-optimal standard of precaution allowed by the ERISA pleading standard has a direct impact on the social costs of litigation through a number of undesirable dismissal decisions by the courts, as they would dismiss more lawsuits at an early stage than it optimally should be. This would produce inefficiencies related to the under-deterrence bias within the litigation system. However, by allowing fiduciaries to avoid liability in a number of cases when they do not apply the optimal level of precaution according to the tort liability law, the sub-optimal risk-averse interpretation of optimal precaution within the ERISA pleading standard generates another fundamental problem – insufficient protection of beneficiaries of an investment scheme.

2.2.3. Sub-optimal Beneficiaries' Protection and Fiduciary Duty Rule Failure (Inefficiencies related to agency costs)

Following the logic of the previous analytical framework, we suppose that the variable r_{nc} (the probability for a Defendant to be held liable for a breach of the FD

[286] *See* Hylton (2008)

[287] For the presentation of the problem, *See* Introduction to this **Chapter III** as well as **Chapter I** of the thesis.

by not complying with the liability standard of optimal precaution) can be used as a quite natural proxy to measure the level of beneficiaries' protection granted by the law enforcement tools. When the litigation system, namely its procedural policy establishing the pleading standard, allows the non-respect of the legal standard of optimal precaution, i.e. shows a lack of enforcement of the tort liability rule, the level of the beneficiaries' protection can be viewed to decline. To illustrate this, let us consider that the beneficiaries' protection can be represented by a single variable that we denote as π (where $0 < \pi < 1$), and assume that $\pi = r_{nc}$[288]. This means that the higher is the possibility to be held liable for the breach of FD, the higher is the beneficiaries' protection assured by the liability and the litigation systems.

Optimal procedural policy leads to the respect of the optimal legal standard of precaution via procuring a necessary incentive to comply with the liability rule via the enforcement function of litigation, particularly the pleading standard. Here, the optimal enforcement would assure the optimal level r_{cn} that, logically, should tend towards unity, representing by that a high protection of beneficiaries, as it would guarantee a trial for all claims where potential Defendants would not be compliant. Thus, such optimal dismissal policy would ensure high compliance rate and punishment in case of non-compliance. Consequently, the agency costs associated with a breach of FD duties by fiduciaries would be minimised. However, as it can be stated that the ERISA pleading standard invites fiduciaries not to comply to a certain degree with the liability rule under the FD law, the probability to be held liable for fiduciaries in court (r_{cn}) will decline. Consequently, the level of the beneficiaries' protection (π) will also go down.

Considering the primary goal of the trust fiduciary law that is to protect beneficiaries of investment schemes in the context of important asymmetries due to principal – agent problem[289], when a FD standard is imposed, it should require a

[288] We deliberately chose the simplest way to illustrate the relation between π and r_{nc} to avoid unnecessary complications.

[289] A perfect example of the principal-agent or agency problem, the relationship between fiduciaries and beneficiaries is characterised by strong dependence (skill deficit), imperfect observability and informational asymmetry. *See* Sitkoff R. H., The Economic Structure of Fiduciary Law, *Boston University Law Review*, Vol. 91, 2011, pp 1039 - 1050. Also, *See* more details on the characteristics of the fiduciary duties in **General Introduction** and **Chapter I** of the thesis.

strict standard of behaviour for fiduciaries aiming to minimize potential agency costs. However, in case of the misalignment of the optimal precaution interpretations within the ERISA FD liability rule and the corresponding procedural law enforcement regime (the pleading standard), it seems that the agency costs, potentially generated due to the non-compliance to the optimal legal standard incentivised by the sub-optimal pleading standard, are not avoided.

Given the stated problematics related to the ERISA pleading standard, a necessity rises to remedy the current state of affairs by amending the standard and aligning it with the tort liability standard of optimal precaution. In response to this imperative, we, by no means, do not have an ambition to formulate the legal rule as it should be. Rather, we attempt based on our analysis to propose some elements for potential corrections in the pleading standard that would seem important for the alignment of its precautionary requirements with the optimal precautionary standard of the ERISA FD tort liability rule. With the main objective to open debates on what the future ERISA pleading standard might look like, we presented these elements on the following pages.

3. RECOMMENDATIONS FOR CORRECTION IN US ERISA JUDICIAL POLICY

In 2014, the US Supreme Court in *Fifth Third Bancorp v. Dudenhoeffer* case formulated for the first time the principle to state a claim for a breach of the fiduciary duties by private pension scheme managers in case of inside information usage – the case of Exxon falls under this principle. This principle took the form of the currently known alternative action test, which was explored in the previous chapters. The Supreme Court thus stated that lower courts should:

"*consider whether the complaint has **plausibly alleged** that a prudent fiduciary in the defendant's position **could not have concluded** that [an alternative action] **would do more harm than good** to the fund by causing a drop in the stock price and a concomitant drop in the value of the stock already held by the fund. (…) We leave it to the courts below to apply the foregoing (…). It is so ordered."*[290]

We have seen in the previous chapters that this formulation of the pleading standard presents some problems and prompts a sub-optimal precautionary activity on behalf of potential Defendants due to its risk-averse interpretation by the US judicial doctrine. This results in inefficiencies related to the functioning of the ERISA liability and judicial systems. Lower courts, by applying this alternative action test formulation by the US Supreme Court in ERISA ESOP stock drop cases, found the proposed standard extremely challenging to apply[291] and very difficult for Plaintiffs to meet. This provoked a general confusion in application of the pleading standard and its alternative action test (AAT) as illustrated in the analysis of ERISA stock drop litigation by the US National Center for Employee Ownership. According to the reported information, in 2016, less than twenty new cases involving ERISA ESOPs stock drops due to presumed FD breaches reached the courts, *by far the*

[290] Fifth Third Bancorp v. Dudenhoeffer 134 S. Ct. 2459, 2472 (2014)

[291] *See* for instance, In re BP p.l.c. Sec. Litig., 2015 WL 1781727, at *17 (S.D. Tex. Mar. 4, 2015), rev'd and remanded sub nom. Whitley v. BP, P.L.C., 838 F.3d 523 (5th Cir. 2016); *See also* Harris v. Amgen, Inc., 788 F.3d 916, 925 (9th Cir. 2015), cert. granted, judgment rev'd, 136 S. Ct. 758 (2016).

fewest in recent years[292]. Today, with only few claims having withstood a motion to dismiss under this pleading principle, the standard and its burden of proof is perceived as insurmountable for Plaintiffs and thus overly stringent (heightened versus what could be the optimal). This evidence confirms our hypothesis of inefficient formulation of the pleading standard based on a risk-averse interpretation of its requirements by the US courts. It also states the need to redesign this standard to bring its risk-neutral formulation incentivising more optimal precaution by fiduciaries and proper functioning of the litigation system. We thus notice that some recent decisions by lower courts allowing a few claims to pass to a trial (even if such decisions are very rare) also revived[293] the debates on the possibilities of amendment of this standard towards its more efficient formulation. On the next pages, we will discuss these positive interpretations of the principle by the lower courts that provide elements for a potential correction of the standard to align it with efficient precautionary measures incentives. We will then attempt to formulate general recommendations for the revision of the standard, as it might be done by the US Supreme Court.

3.1. Proposition of Possible Changes

In our previous analysis, we established that the misalignment that provides a sub-optimal precautionary incentive through the ERISA pleading standard and its alternative action test (AAT) could be explained by the risk-averse interpretation of this standard by the US ERISA judicial doctrine. Following this conclusion, it is possible to state that a neutral consideration of precautionary uncertainty related to the effectiveness of alternative actions

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[292] *See* the interview of Corey Rosen, cofounder and senior staff member of the National Center for Employee Ownership by Andrea L. Ben-Yosef in the Article *ESOP Litigation Waning Due to Better Economy, Dudenhoeffer Decision*, Bloomberg, September 9, 2016. The article is available here: https://www.bna.com/esop-litigation-waning-b73014447455/

The report for 2018, *ESOP and 401(k) Plan Employer Stock Litigation Review 1990-2018,* is available here (payment required): https://www.nceo.org/ESOP-401k-Employer-Stock-Litigation/pub.php/id/258/

[293] *See* Article on the analysis if *Dudenhoeffer* pleading standard and "stock drop" cases, by Wolters Kluwer, the *Journal of Pension Benefits*, Spring 2017, Vol. 24, No. 3.

With few exceptions, the lower federal courts have ruled in favor of defendants in the wake of Dudenhoeffer. *As a result, the ongoing viability of so-called "stock drop" cases is uncertain*.

would represent an efficient correction for this standard. Based on this assumption, we will now review the elements of the pleading standard that could imply risk-averse interpretation.

Indeed, it seems that lower courts, well aware of the very first ERISA pleading standard (before AAT) that was extremely *defendant-friendly*[294] and of the unfair judgements under it, fear judgment errors. Thus, they apply the current pleading standard very cautiously by demanding an overly high degree of certainty about the outcomes and the efficiency of alternative action in foresight and neglecting, to some degree, sub-optimal precautionary effort by fiduciaries that such risk-averse interpretation encourages. This problematics is known to the academic research. For instance, Demougin and Fluet (2005) showed that the arbitrage between these two global objectives (to avoid judgment errors and to incentivise a proper precaution) vary in different countries and a particular legal system's preferences for one of these objectives can be clearly established through its analysis. It is known that in case of aiming for judgment error reduction in the first place, a particular legal and liability systems would generally imply *heightened*[295] standards of proof in comparison with those that would be considered with the objective to stimulate optimal precaution[296]. Therefore, a more common and less stringent proof requirement seems to be needed to assure an equilibrium in the fulfilment of each of the two stated goals that would provide a neutral perception of uncertainty in the qualification of evidence (proof), namely in terms of the effectiveness of alternative actions.

For that, the generally used in civil private law litigation standard of *preponderance of evidence (PE)* represents an interesting example. This general

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[294] Before *Dudenhoeffer* case (2014) and the creation by the US Supreme Court of the alternative action test under the pleading standard, a presumption of prudence for defendants reigned in the field of ERISA ESOP stock drop cases. *See* **Chapter I** and the previous chapters of **Chapter III** of the thesis.

[295] *See* Cooter R. D., Ulen Th., *Law and Economics*, 6th Edition, Berkley Law Books, 2016, 570 p. The court can have established other standards of prevailing in private law disputes. For example, some jurisdictions have created a standard of *clear and convincing evidence* for some aspects of a civil case, such the award of punitive damages. No one can be certain exactly what this means, but it is certainly more demanding than the preponderance of evidence standard.

[296] *See* Deffains and Langlais, *Economic analysis of law: principles, methods, results*, Chapter 2, Groupe De Boeck, 2009, 407 p (in French).

standard of proof is based on the principle that if a Plaintiff's story is 51 percent *believable* (versus 49 percent for a Defendant) then such Plaintiff wins. Thus, the preponderance of evidence is grounded on the fact that some arguments (by Plaintiff or by Defendant) are more *believable* than others. Sure, in this case, the choice between the requirements of proof to apply is not obvious, however, the preponderance-of-evidence standard (hereafter, PE) possesses some undeniable merits. Namely, the choice of the PE standard can be more effective for a symmetric allocation of the errors related to false-acquittal as well as to false-conviction. Under PE-equivalent standard, these errors will have equal chances to occur. Thus, in general, such standard would not favour Defendants over Plaintiffs or vice versa. In general, Brook (1982) shows that the PE standard contributes to the minimisation of the frequency of errors by the judge[297]. These properties of the PE principle are quite interesting for our case of the ERISA ESOP pleading standard, as one of the bias of the latter is that, due to its inefficient (risk-averse) interpretation by the courts, it favours explicitly Defendants.

However, we should note some differences between the burden of proof for a final judgment on a case (considered under the PE) and the evidence requirements at the very first stage of a judicial procedure (considered under the proof requirements of the pleading standard). These differences make the case of the pleading standard quite specific. In our particular case of ERISA ESOP stock drop litigation, the proof requirement is viewed specifically as part of the pleading standard, which regards only the very first stage of the judgmental process and does not mean to determine who wins the case (Plaintiff or Defendant), but rather states globally whether Plaintiffs have any chance to win. Given this *filter-function* of the pleading standard, many legal professionals argue that the pleading rules should not be used to bar many claims, as there exist further legal procedures that could serve this purpose in a more efficient way: pre-trial discovery, pre-trial conference and summary judgment[298]. On the

[297] Under the hypothesis that the errors of both types present the same cost for the society.

[298] *See* J. A. Pike and J. W. Willis, *The New Federal Deposition-Discovery Procedure*, 38 Column L Rev 1179, 1938.

See also J. H. Friedenthal, M. K. Kane and A. R. Miller, Civil Procedure 252, Thomson / West 4th ed 2005

other hand, other practitioners consider that pleading rules should be rigorously enforced by courts to assure that no *low merit*[299] claim withstands a motion to dismiss. Hylton (2008) finds the way to show this relation between the objective of pleading standards both to avoid trial errors and to procure efficient precautionary incentives. The author arrives to a global conclusion that the rigour of requirements of a pleading standard increases with an increase in the total social costs of the associated litigation process and an increase in the level of evidentiary requirements of the associated law. We note that this assumption works only under the hypothesis that the pleading standard and the legal rule are aligned in terms of precautionary incentives; we observed it through our analysis of the ERISA pleading standard presented in the previous chapters. The author shows that, in general, pleading standards leading to dismissals at an early stage of a trial enhance the average quality of lawsuits (that allows to avoid errors), which in its turn enhances incentives to comply with the law. However, as we have shown previously in our analysis, when incentives to comply sent by the pleading standard differ due to a misalignment in evidentiary requirements between the standard and its general liability rule (in our case, an over-requirement of proof by the pleading standard), this may lead, within the same analytical framework, to under-deterrence, i.e. false-acquittals through dismissing of potential high quality lawsuits. Such *over-requirement of proof* at the pleading stage can thus be qualified as representing a *heightened* standard in opposition to the example of the traditional preponderance-of-evidence standard. This situation can be observed in case of the US ERISA pleading standard. Particularly, we notice it from the analysis if the two elements of the standard formulated by the Supreme Court in *Dudenhoeffer,* which state a misalignment of the pleading standard with the ERISA liability law due to, as we determined previously, a risk-averse interpretation of its evidence requirements. These particular elements, which will be targeted in this analysis for application of potential corrections with the objective to revise the current heightened pleading standard to achieve its optimal formulation, are represented by the need for Plaintiffs to:

[299] As defined in the previous chapters of **Chapter III**.

(1) ***plausibly allege*** that a prudent investor (2) ***could not have concluded*** that an alternative action would do more harm than good to the fund.

The formulation of the pleading standard, which introduces *plausibility* requirement in relation to proof, states in itself a higher evidentiary requirement than the common (51/49) PE standard. Particularly, Adam N. Steinman (2016) in his article *The Rise and Fall of Plausibility Pleading?*[300] explains that a new pleading regime was adopted in US civil regulation on the federal level since the Supreme Court's 2007 decision in *Bell Atlantic Corp. v. Twombly* and its 2009 decision in *Ashcroft v. Iqbal*. This regime *upended the notice-pleading approach*[301] *that had long prevailed in federal court* and brought a new pleading principle – *plausibility pleading*. Many law practitioners criticised the principle by stating that as under such regime whether a complaint could survive a motion to dismiss depends only on whether the court finds the complaint *plausible* there exist a risk of various bias in courts' judgments. Namely, plausibility pleading (hereafter, PP) allows courts *to second-guess a complaint's allegations without any opportunity for discovery or consideration of actual evidence*. As a result, it was largely argued that *plausibility pleading had fundamentally recalibrated federal litigation, undermining access to justice and the private enforcement of substantive law*.

Indeed, empirical studies suggest that *Twombly* and *Iqbal* have had a significant effect on lower-court decisions and litigant behaviour. If some more general studies Gelbach (2014), Engstrom (2013) give a global overview on related problematics, others, Hoffman (2011), Moore (2012), Reinert (2011, 2015), etc.[302],

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[300] *See* Steinman A. N., The Rise and Fall of plausibility Pleading?, *Vanderbilt Law Review*, Vol. 69, No. 333, 2016, 68 p

[301] *Notice-pleading* allows a thorough presentation and analysis of all available information by court before taking a decision to dismiss a claim. As writes Steinman (2016) *the notice-pleading approach for more than half a century allowed disputes to be resolved on their merits after a meaningful opportunity for parties to uncover relevant evidence*.

[302] *See* Boyd Ch. et al., Building a Taxonomy of Litigation: Clusters of Causes of Action in Federal Complaints, *Journal of Empirical Legal Studies*, Vol. 253, 2013. Gelbach J. B., Locking the Doors to Discovery? Assessing the Effects of Twombly and Iqbal on Access to Discovery, *Yale Law Journal*, Vol. 121, 2012. Hubbard W. H. J., Testing For Change In Procedural Standards, With Application To Bell Atlantic v. Twombly, *Journal of Legal Studies*, Vol. 35, 2013. Cecil J. S., Of Waves and Water: A Response to Comments on the FJC Study Motions to Dismiss for Failure to State a Claim after Iqbal, *Working Paper*, 2012, available here: http://ssrn.com/abstract=2026103. Cecil J. S. et al., *Motions to Dismiss for Failure to State a Claim After* Iqbal*:*

directly examine adverse effects of such *heightened* pleading standard. Particularly, it was argued by some authors that *Twombly* and *Iqbal* could create a so-called *Catch-22* bias. This bias represents a situation where *plaintiffs would need court-supervised discovery in order to obtain the information needed to get past the pleading phase, but they could not invoke the discovery process unless they survived the pleading phase*, what, once again, they cannot do without this information[303]. In his article, Steinman having considered the results and assumptions provided by the critics of *Twombly* and *Iqbal* performs his own detailed analysis of these two fundamental cases. He then arrives to a conclusion that the stringent character of the plausibility pleading (that could cause the stated bias) is grounded, first of all, on the systematically incorrect reading of *Twombly* and *Iqbal* by lower courts. Through his analysis, he states clearly that the doctrinal misperceptions about *Twombly* and *Iqbal* actually heightened the pleading standard. This conclusion is very similar to the argument that we used in our earlier analysis of the ERISA ESOP stock drop case stating the doctrinal misinterpretation of the pleading standard via a risk-averse attitude in the qualification of alternative actions. Moreover, the misperception of the ERISA pleading standard, namely, its misguided risk-averse interpretation by the judicial doctrine seems to be directly connected to this *Twombly* and *Iqbal* problem. We find direct references to *Twombly* and *Iqbal* in the presentation of the legal decision by the court in the Exxon case[304]. Remember, that the court granted Exxon motion to dismiss. Consequently, we could conclude that the risk-averse reading of the plausibility requirement by the courts in the qualification of alternative actions in ERISA ESOP stock drop cases represents one of the elements related to the inefficiencies of the analysed pleading standard.

Report to the Judicial Conf. Advisory Comm. on Civil Rules, Federal Judicial Center, 2011. Cecil J. S. et al., *Update on Resolution of Rule 12(b)(6) Motions Granted with Leave to Amend: Report to the Judicial Conference Advisory Committee on Civil Rules,* Federal Judicial Center, 2011, etc.

[303] *See* Dodson S., New Pleading, New Discovery, *University of Michigan Law Review*, Vol. 109, 2010. Miller A. R., From Conley to Twombly to Iqbal: A Double Play on the Federal Rules of Civil Procedure, *Duke Law Journal*, Vol. 60, 2010. Steinman A. N., The Pleading Problem, *Stanford Law Review*, Vol. 62, 2010.

[304] *See* Bobby D. Fentress, et al., v. Exxon Mobil Corp., Civil Action No. 4:16-CV-3484, US District Court, South. Dist. of Tex., March 30, 2018, III. LEGAL STANDARDS, p. 5: *To survive a Rule 12(b)(6) motion to dismiss, a complaint 'does not need detailed factual allegations,' but must provide the plaintiff's grounds for entitlement to relief—including factual allegations that when assumed to be true 'raise a right to relief* above the speculative level.' *Cuvillier v. Taylor, 503 F.3d 397, 401 (5th Cir. 2007) (citing Bell Atl. Corp. v. Twombly, 550 U.S. 544, 555 (2007))*

Despite extensive critics by different scholars of the *plausibility* problem in the US pleading regime including the ERISA ESOP pleading standard, so far no guidance or concrete principle on how to solve this problem was provided by the US regulators or the US Supreme Court. Thus, the definition of what could be understood by courts as a *plausible*[305] allegation still could have a potential to evolve in the general US pleading regime as well as in ERISA pleading standard more concretely. The need and the potential for such evolution towards a less stringent and more efficient standard through a clarification of the ERISA standard of pleading by the US regulatory or judicial authorities is also reflected in some recent legal cases that counter the general *heightened (risk-averse)* interpretation of the pleading standard and plausibility principle by the judicial doctrine.

Particularly, in 2015 *Murray v. Invacare Corp*. lawsuit[306], the Defendants' motion to dismiss was denied by the court as the latter found the Plaintiffs' allegations and proposed alternative action that the plan fiduciaries could have taken under the circumstances to be *plausible*. To summarise, in this case the Plaintiff asserted that the Defendants breached their fiduciary duties when they allowed plan participants to acquire more shares of their company (Invacare), even though they knew that the company was noncompliant with the safety and manufacturing regulations that exposed it to some legal risks. The Plaintiffs alleged that the company's management of legal risks was insufficient and that Invacare could anticipate that such deficient risk management could result in penalties to the company and the drop in its stock price. After examining the proposed by the Plaintiffs alternative actions that Invacare could have taken and, which the company could not have seen as causing the fund more harm than good (one of possible alternative actions was to stop any further investments in the company's stock), the court concluded that the plaintiffs met the *Dudenhoeffer* pleading standard. In this lawsuit, even if the court recognized that some of the proposed alternative actions could be seen as *fairly extreme* and could lead to *significant consequences*, it found that *Dudenhoeffer does not*

[305] *See* Garrett B. L., Essay Applause for the Plausible, *University of Pennsylvania Law Review Online*, Vol. 162, 2014: *Synonyms for 'plausible' include 'credible,' 'creditable,' 'likely,' 'believable,' 'presumptive' and 'probable'*, etc.

[306] *Murray v. Invacare Corp.*, 125 F. Supp. 3d 660, 663 (N.D. Ohio 2015)

foreclose such an action[307] and thus the alternatives should be examined further at the next stage of the trial.

Another example that states clearly a less stringent and more *neutral* interpretation of the pleading rule by the Judge is the 2015 *In re SunTrust Banks, Inc. ERISA Litigation*[308]. In this ERISA ESOP stock drop claim, the Plaintiffs alleged that the SunTrust pension plan's fiduciaries breached their FD by having continued to invest in the company's stock despite being aware that SunTrust's market price was *artificially inflated* due to nondisclosure of the *material* information about its weakened financial position. Among the alternative actions proposed by the Plaintiffs, there was an option for the company to have invested more of the fund's assets in cash rather than in its own stock and then to have closed the fund to further contributions. Other alternatives concerned a possible early disclosure of the real financial situation of the company, a request by the Sun Trust of a guidance from the US Department of Labor (DOL) or even a resignation of the plan's fiduciaries and a call for external experts to serve as advisors or fiduciaries of the plan, etc. In this case, the court did not thoroughly analyse the proposed alternative actions that, according to the Judge, should not be the objective of the first stage of a trial – i.e. pleading. The Judge just considered these options and held that ***it would be premature to dismiss Plaintiffs' (…) claim at this stage in the proceedings, prior to fact and expert discovery. The Court is unwilling to find that Plaintiffs' alternative options fail as a matter of law without development of the factual record and the aid of expert testimony***[309].

These lawsuits, however, appear to represent rare exceptions to the general trend of the *heightened* (risk-averse) interpretation of the ERISA ESOP pleading standard and its plausibility principle by the courts. They constitute very few post-*Dudenhoeffer* decisions, in which lower courts allowed claims to survive and proceed beyond a motion to dismiss. Nevertheless, these judicial decisions contribute to the questioning of the pleading standard. They signalise

[307] *Murray v. Invacare Corp.*, 125 F. Supp. 3d 669 (N.D. Ohio 2015)

[308] *In re SunTrust Banks, Inc. ERISA Litigation*, No. 8-cv-3384, 2015 WL 12724074 (N.D. Ga. June 18, 2015)

[309] *In re SunTrust Banks, Inc. ERISA Litigation*, No. 8-cv-3384, 2015 WL 12724074, at *4.

the problematics that a heightened risk-averse qualification of claims' plausibility by courts at the very first stage of a trial [310] would place an overly hard burden on Plaintiffs. The burden that should normally be demanded by courts on further steps of the judicial procedure, as *the weighing of harm versus good* [for each of the alternative actions] *is inherently fact-specific and subject to expert analysis, and this is especially in the securities context*[311]. However, more generally, these decisions demonstrate that the judicial doctrine is still not definitely set when it comes to the interpretation of the pleading standard. They show that there is still space for a debate and for solutions to the stated problems.

We note that the first (and the sole for now) attempt to find a solution, i.e. to request a concrete guidance in the interpretation of the ERISA pleading standard under the judicial doctrine, was performed by the Retirement Plans Committee of IBM. After having been accused of a breach of their FD, they sent a Petition for a Writ of Certiorari directly to the US Supreme Court[312] with a demand to state a clear principle of what constitutes a plausible alternative action allegation. In *Jander v. Retirement Plans Committee of IBM* ERISA stock drop case (2018-2019), the Plaintiffs argued that the Defendants (IBM) breached their FD by having continued to invest retirement plan capital in IBM common stock even if they knew that the company had some undisclosed troubles in its microelectronics business segment. The Plaintiffs formulated possible alternative actions that IBM could have taken in this situation in order to avoid or, at least, to reduce losses due to eventual leak of

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[310] *See* Bobby D. Fentress, et al., v. Exxon Mobil Corp., Civil Action No. 4:16-CV-3484, US District Court, South. Dist. of Tex., March 30, 2018, III. LEGAL STANDARDS, p. 5: *To survive a Rule 12(b)(6) motion to dismiss, a complaint 'does not need detailed factual allegations,' but must provide the plaintiff's grounds for entitlement to relief—including factual allegations that when assumed to be true 'raise a right to relief above the speculative level.*' (*Cuvillier v. Taylor*, 503 F.3d 397, 401 (5th Cir. 2007) (citing *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 555 (2007)). *A complaint must contain sufficient factual matter, accepted as true, to 'state a claim to relief that is plausible on its face*.' *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (quoting *Twombly*, 550 U.S. at 570).

[311] *See* In re BP p.l.c. Sec. Litig., 2015 WL 1781727, at *17

[312] Certiorari is a Latin word meaning *to be informed of, or to be made certain in regard to*. **Petition for Writ of Certiorari** (informally called *Cert Petition*.) is a document, which a losing party files with the Supreme Court asking the Supreme Court to review the decision of a lower court. It includes a list of the parties, a statement of the facts of the case, the legal questions presented for review, and arguments as to why the Court should grant the writ.

The source of the definition: http://www.techlawjournal.com/glossary/legal/certiorari.htm

this information to the market, which produced an abrupt drop in the value of its stock. Among the stated alternatives was an earlier and organised disclosure of this information by the company. Following the general trend in the qualification of such cases, the U.S. District Court for the Southern District of New York determined that the plaintiffs did not plausibly plead a violation of ERISA's duty of prudence and granted to Defendants' a motion to dismiss. This decision was repeated by the court following the re-filing of a claim by the Plaintiffs based on the finding by the court that the complaint lacked context-specific allegations to satisfy *Dudenhoeffer* pleading standard requirements. However, with the assertion that the interpretation of the *Dudenhoeffer* by the District Court was actually stricter than it should be, thus, making it functionally impossible to plead a breach of the duty of prudence, the Plaintiffs appealed this decision and brought the case to the Second Circuit Court. The latter reversed the district court's judgment dismissing the complaint and remanded the case for further proceedings. In so ruling, the Second Circuit became the first circuit court since the Supreme Court's decision in *Fifth Third Bancorp v. Dudenhoeffer*[313] to allow such a claim to survive a motion to dismiss[314]. However, most importantly, this case and such decision of the Second Circuit court gave rise to an explicit questioning by IBM of the interpretation of the ERISA pleading standard. As IBM wanted to appeal in its defence and clarify what are the exact requirements of the ERISA pleading standard. It is with this objective that the Retirement Plans Committee of IBM sent a petition for a writ of certiorari to the US Supreme Court asking the court to answer whether *Fifth Third's more harm than good* [or AAT] *principle* of the pleading standard can be satisfied by generalized allegations (as it was decided by the Second Circuit).

This search for the Supreme Court's guidance on what should be the actual effective formulation of the *Dudenhoeffer*-based ERISA pleading

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[313] *Fifth Third Bancorp v. Dudenhoeffer* 134 S. Ct. 2459 (2014)

[314] *See* one of the analyses of the case by legal professionals available here: https://www.erisapracticecenter.com/2018/12/second-circuit-revives-dismissed-erisa-stock-drop-suit/

Quotation taking from this analysis: (…) *this has sparked renewed hope within the ERISA plaintiffs' bar in the viability of these claims*. *See* also Article, IBM Petitions Supreme Court to Consider Dudenhoeffer Pleading Standard. A U.S. Appeals Court rejected a District Court's finding that was similar to many decision in lawsuits following the Supreme Court's decision in *Fifth Third v. Dudenhoeffer*, by Rebecca Moore in PLANSPONSOR, March 13, 2019. The article is available here: https://www.plansponsor.com/ibm-petitions-supreme-court-consider-dudenhoeffer-pleading-standard/

standards testifies on the importance and on the viability of the stated problem. This supports our previous analysis of the ERISA pleading standard inefficiencies, which brings evidence on the need for a revision of the *plausibility* requirement and, thus, a general correction of the current *risk-averse* interpretation of the pleading standard by the judicial doctrine. In this context, we argue that the US Supreme Court in its review of the *plausibility* principle within the *Dudenhoeffer* ERISA pleading standard in response to the IBM demand should consider the reasoning proposed by the lower courts in *Murray v. Invacare Corp*. and *In re SunTrust Banks, Inc*. cases presented earlier. The Supreme Court might also consider the example of the global and objectively less stringent *preponderance-of-evidence (PE)* standard of proof generally used in tort negligence-based litigation discussed here-before. To put it more precisely, we attempt to provide some corrections based on the stated elements to allow the revision of the formulation of the ERISA ESOP pleading standard with a less stringent (more risk-neutral) attitude as related to the qualification of the *plausibility* of Plaintiffs' allegations.

Particularly, we ground our **Proposition 1** on the fact that (as it was previously mentioned) the ERISA pleading standard could accept a more relaxed formulation of evidence requirements[315]. Based on that we argue that the pleading standard could explicitly recognize (in order to allow a claim to survive a motion to dismiss) those proposed alternative actions, which *are valid enough to evoke the need in further analysis and confirmation on the following stages of the judicial procedure.*

However, our first recommendation treats only to one of the two elements stated by us earlier as potential sources of the misalignment of the requirements by the FD tort liability law with the associated pleading standard. The *Dudenhoeffer* formulation of the requirement for a claim to *plausibly allege that* ***a prudent fiduciary*** *in the defendant's position* ***could not have concluded*** *that [an alternative action] would do more harm than good to the fund* presents in our

[315] *See* Bobby D. Fentress, et al., v. Exxon Mobil Corp., Civil Action No. 4:16-CV-3484, US District Court, South. Dist. of Tex., March 30, 2018, III. LEGAL STANDARDS, p. 5: *To survive a Rule 12(b)(6) motion to dismiss, a complaint 'does not need detailed factual allegations'* (Cuvillier v. Taylor, 503 F.3d 397, 401 (5th Cir. 2007) (citing Bell Atl. Corp. v. Twombly, 550 U.S. 544, 555 (2007))

opinion another problem. More precisely, this problem concerns the interpretation of the *prudent investor* requirement under the *plausibility principle*. This problematics was most explicitly stated by the Second Circuit court in *Jander v. Retirement Plans Committee of IBM*. While analysing the case, the court explained that the Supreme Court's *Dudenhoeffer* test was not clear on several points, among which was the source of the parties' dispute, i.e. the qualification of a fiduciary's action as *imprudent*. This consideration is related to the existing multiple formulations by courts of the ERISA pleading requirements under the *Prudent Investor Principle*. Particularly, the court states that:

The [US Supreme] *Court first set out a test that asked whether "a prudent fiduciary in the same circumstances* ***would*** *not have viewed [an alternative action] as more likely to harm the fund than to help it.*[316]*" (emphasis added). This formulation suggests that courts ask what an average prudent fiduciary might have thought. But then, only a short while later in the same decision, the Court required judges to assess whether a prudent fiduciary "****could*** *not have concluded" that the action would do more harm than good by dropping the stock price*[317]*. (emphasis added). This latter formulation appears to ask, not whether the* ***average*** *prudent fiduciary would have thought the alternative action would do more harm than good, but rather whether* ***any*** *prudent fiduciary could have considered the action to be more harmful than helpful. It is not clear which of these tests determine whether a plaintiff has plausibly alleged that the actions a defendant took were imprudent in light of available alternatives*[318]*.*

In this particular lawsuit, the Second Circuit court found it unnecessary to decide which formulation applies because, in the Court's view, the complaint's allegations satisfied either standard. However, according to the Court, the issue still needed clarification for a proper application of the ERISA pleading standard. Particularly, the court of appeals admitted that it was *not clear which of these tests determine whether a plaintiff has plausibly alleged that the actions a defendant took* ***were imprudent*** *in light of available alternatives*. The difference between these two formulations involving *would* or *could* requirements is quite important. An *average-*

[316] *Fifth Third Bancorp v. Dudenhoeffer* 134 S. Ct. 2472 (2014)

[317] *Fifth Third Bancorp v. Dudenhoeffer* 134 S. Ct. 2473 (2014)

[318] *Jander v. Retirement Plans Committee of IBM, No. 17-3518 Sec. Cir. (2018)*

prudent-fiduciary decision-making framework is less stringent than the *any*-prudent-fiduciary one, where an absolute certainty about the effectiveness and the outcome of an alternative action seems to be required. We, thus, come back to our earlier analysis of the misalignment of the pleading standard and the FD liability rule based on a risk-averse attitude in qualification of actions and their effectiveness under the pleading standard[319]. And, while analysing the prudent investor legal standard as actually formulated by ERISA, we find that the ERISA FD rule is based on the *would* (or *an average fiduciary*) formulation:

(…) *a fiduciary shall discharge his duties* (…) *with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters* ***would*** *use in the conduct of an enterprise of a like character and with like aims*[320].

Given that and on the basis of our previous analysis where we state the need for realignment of the pleading standard requirements with the efficient (*risk-neutral*) formulation of the ERISA liability standard of optimal precaution, we arrive to a conclusion that the *would* formulation of the prudent investor requirement under the plausibility principle of the ERISA pleading standard is preferable. We, thus, formulate **Proposition 2** by recommending, in order to avoid the stated social costs associated with the *heightened* (*risk-averse*) pleading standard, to consider in the revision of the *Dudenhoeffer* pleading principle by the US Supreme Court the *average fiduciary* test as a decision rule for claims dismissals.

The proposed recommendations aim to realign the ERISA pleading standard precautionary requirements with those of the FD tort liability under the trust fiduciary law and, thus, to bring a risk-neutral formulation of the pleading standard that would balance the objective to provide an efficient precautionary signal against the one to establish a socially optimal litigation procedure. Such corrections in the

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[319] *Jander v. Retirement Plans Committee of IBM, No. 17-3518 Sec. Cir. (2018), page 18:*

Jander notes that no duty-of-prudence claim against an ESOP fiduciary has passed the motion-to-dismiss stage since *Amgen*, and he asserts that the courts—and the Plan defendants—have misread that decision. According to Jander, imposing such a heavy burden at the motion-to-dismiss stage runs contrary to the Supreme Court's stated desire in *Fifth Third* to lower the barrier set by the presumption of prudence.

[320] ERISA of 1974 as amended through P.L. 114-255, enacted December 13, 2016, SEC 404. Fiduciary Duties [1104]

qualification of alternative actions under ERISA liability standards do not mean that an alternative action will always be totally successful in mitigating an identified material risk (including ESG risks). However, they imply that as far as a positive outcome of such action is *plausible* enough in terms of our **Proposition 1** and **Proposition 2**, investors should choose it.

3.2. Potential Challenges Related to the Proposed Changes

Having provided these recommendations for potential corrections of the ERISA pleading standard with the objective to realign it with the optimal precautionary standard of the ERISA FD tort liability, we want now to warn about some potential pitfalls related to the suggested changes.

First of all, by stating that the realignment of the pleading standard with the risk-neutral incentives to precaution set by the law should lead investors to choose a positive outcome of an alternative action when the latter is *enough valid*, we consider that such choice would be made within the general investor's decision-making process. Otherwise saying, potential alternative actions should be considered by a fiduciary as part of the opportunity set within the framework of risk management and investment decision-making with the main objective to take a proper investment management decision under given economic and legal constraints. To put it precisely, under this interpretation of the Prudent Investor standard set by the FD legal rule and supported by the requirements of the pleading standard, we do not expect fiduciaries to *try to avoid losses* by all means, but to take a proper efficient investment decision. Here, we agree with Ori J. Herstein (2010) who argues that the duty of prudence is not about an attempt to avert harm, it is not a *Duty "To Try"*[321], but a requirement of a sound conduct – i.e. a sound decision-making. It is very important to state clearly this point to avoid a possible *Try*-focused interpretation of our recommendations and the duty of prudence in general as they are presented in this thesis. Herstein asserts, and we take her side here, that the perception of the duty of care

[321] Herstein, Ori J., Responsibility in Negligence: Why the Duty of Care is not a Duty "To Try", *Cornell Law Faculty Publications*, Paper 127, 2010, p. 1: *It is a mistake to conceive of the duty of care in negligence as a duty to try to avert harm.*

specifically as a *duty to try to avoid harm* presents some potential flaws. Namely, the author notes that such interpretation would *fail to comport with the legal doctrine of negligence and* [would] *fail as a revisionary account for the law*. Also, such *duty to try* would *overly burden autonomy* [of decision-makers] *and restrict the liberty of* [choice]. Moreover, it would *adversely affect the prevention of negligent harm — the essence of the negligence standard — and,* [would] *raise severe probative difficulties* (Herstein, 2010). Therefore, the author insists that the duty of prudence (care) represents a standard of conduct alone, which provides guidelines to decision-makers on their expected actions and behaviour and, thus, should be qualified as a *duty 'to do' or a 'duty to succeed'*[322] and not strictly 'to avoid loss'. We precise, however, that this formulation does not exclude trying to avoid harm in situations where it could be seen as compliant to the requirements of the FD obligations of investors, i.e. *where preventing negligent harm is best achieved by trying to avert harm* (Herstein, 2010).

Another flaw that we aim to avoid by rejecting the interpretation of the duty of prudence as a *duty to try to avoid losses* is the one related to the associated with such interpretation specific intention (to avert harm) and its effect on the definition of a reasonable conduct by an investor. It seems that in case of a *duty to try*, a decision-maker would be obliged to formulate particular preferences in decision-making, what would lead to a formulation of a quite precise profile of a decision-maker and, consequently, of its conduct pattern focused on loss avoidance under the fiduciary duty legal and judicial standards. And, when it comes to the investment decision-making, such quite stringent pattern would represent some serious difficulties and consequences. The effects of such interpretation had already been experienced by the US institutional investors' market before the revision of the ERISA provisions in 1974 and the introduction of the modern Portfolio Theory principles at the basis of the definition of the ERISA fiduciary duties and, particularly, of the duty of care (prudence). That caused a high risk-aversion among pension funds and the banning of many of risky investment mechanisms and instruments directly through the regulatory texts in the state-level

[322] *See* Herstein, Ori J., Responsibility in Negligence: Why the Duty of Care is not a Duty "To Try", *Cornell Law Faculty Publications*, Paper 127, 2010: *…the duty of care is not a duty to try to avert harm but a duty to succeed in generating reasonable conduct.*

regulation[323] (Pozen, 1977). With the objective to avoid returning to such highly stringent, risk-averse, loss avoidance-concentrated interpretation of fiduciary duties, we consider in this thesis that the duty of prudence under ERISA is a duty of reasonable conduct, which does not incorporate any additional requirements related to the particular and sole objective of loss avoidance. We thus avert of potential deficiencies of the other interpretation.

Secondly, despite some precisions on the judicial qualification of investors' decisions under the ERISA pleading standard presented in our recommendations, we should note that in general the standard remains vague[324] and is still a subject of interpretation by judges. Some legal practitioners directly state the risks and difficulties related to the vagueness of the ERISA pleading standard. *Lower courts have struggled with how to apply the* [US Supreme] *Court's decision in the ensuing years, and the high court has yet to resolve the interpretive difficulties*[325]. It is agreed among many legal professionals that the pleading standard *neglects to offer any guidance about what facts a plaintiff must plead to state a plausible claim for relief*[326]. In this research, we concentrated on the problematics of realignment of the pleading standard precautionary incentives with those set by the fiduciary liability law and the proposed corrections aim to contribute to this realignment alone. Therefore, our propositions – the *average fiduciary* interpretation of the duty of prudence requirements and the qualification of proof as '*valid enough for further analysis*' –

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[323] *See* Pozen R. C., The Prudent Person Rule and ERISA: A Legal Perspective, *Financial Analysts Journal*, Vol. 33, No. 2, 1977, pp. 30-35. Before the passage of the ERISA of 1974, no federal provisions existed in terms of pension trustees' regulation. States were mainly responsible for regulating the investment choices of pension schemes. Some states enacted lists of permissible investments for trustees, banning high-risk financial instruments. *See* also Schanzenbach M. M. and Sitkoff R.H., Did Reform of Prudent Trust Investment Laws Change Trust Portfolio Allocation?, *Journal of Law and Economics*, Vol. 50, University of Chicago Press, November 2007

[324] Jerzy Wroblewski, *Semantic basis of the theory of legal interpretation*, University of Looz, 1963. On the definition between a vague and an ambiguous legal standard: "*An expression is called ambiguous when it has more than one meaning. A norm may be ambiguous but not vague if each of the conflicting meanings has clear-cut limits. If the norm is vague in respect to one fact-situation the question is whether it has a meaning according to which it fits that situation or a meaning with which it does not fit it. It gives space to law interpretation. The law applying organ has to interpret legal norms so as to reach the meaning of the legal norm, sufficiently clearly to decide a given case*."

[325] See *Jander v. Retirement Plans Committee of IBM, No. 17-3518 Sec. Cir. (2018)*

[326] See *Saumer v. Cliffs Nat. Res.Inc.*, 853 F.3d 855, 865 (6th Cir. 2017)

still do not represent a concrete rule and leave much space for the pleading standard's interpretations by the judge.

In this context, it is important to state that the question of the choice of a degree of precision and detailing of a legal standard represents a large field of academic discussions. The first analyses on the formulation of the degree of precision of legal standards were initiated by Richard A. Posner and his co-authors. Ehrlich and Posner (1974), Landes and Posner (1976), Calfee and Craswell (1984, 1986) studied this question. They generally isolate the degree of precision of legal standards and try to determine its effects on the deterrence power of legal rules. As a result of these studies, the choice of the degree of precision of legal standards is associated with an arbitrage between various related costs and benefits[327]. Later, Kaplow (1992, 1995) and then Lang (2014) continued the analysis of conditions of this arbitrage. And Posner (1992) as well as other scholars defend the position that more precise standards could be quite useful for guiding and informing of courts in their decisions. On the other hand, Mahoney and Sanchirico (2005) study the *generality* of legal standards (a general standard covers a number of various situations). And Obidzinski (2006), Deffains and Obidzinski (2009) introduce the question of flexibility in the analysis of legal standards by arguing that a flexible standard can be useful in cases where a judge might need a margin of appreciation in qualification of cases presenting differences under the same standard.

Vague legal requirements (or *standards* as they are called in Law and Economics theory in opposition to concrete and detailed *rules of law*) require judicial interpretation, which would generate significant costs for judges, who would have to determine whether the standard was breached by Defendants. Schäfer (2006) explains the importance of the costs of adjudicating or administering a legal norm that vary for standards and rules and should be considered in relation

[327] *See* Hans-Bernd Schäfer, Rules versus Standards in Rich and Poor Countries: Precise Legal Norms as Substitutes for Human Capital in Low-Income Countries, Supreme Court Economic Review, Vol. 14 (2006), pp. 113-134. *Legal norms can be precise rules, which are blueprints for action and allow for mechanical decisions by judges and civil servants. Alternatively, they can be vague, mission-oriented standards, which delegate decisions from the maker of the law to the judiciary and the administration. administration. Rules economize on the costs of adjudication and administration. Standards economize on the costs of norm specification*. Also *See* Richard A. Posner, *Economic Analysis of Law*, Aspen 5th ed, 1998.

to the costs per legal case and to the number of cases. He notes that vague norms (standards) entail low fixed costs of norm specification, i.e. the cost of their design is generally quite limited. However, they imply high costs (per case) of adjudication. As a result, standards generate lower total costs if the total number of cases is low. This theory could explain the use of quite stringent pleading standards in order to bring the number of cases under the quite vague and general ERISA liability standard to its efficient minimum. However, we should not forget about the first goal of any legal norm – minimisation of the social cost. And, in our case of tort fiduciary law this objective represents minimisation of the social costs of accidents through providing incentives to optimal precautionary efforts by fiduciaries.

Schäfer (2006) defines an *efficient law* as the one that *minimizes the sum total of the transaction* [also social] *costs while also minimizing the costs of legal drafting as well as the costs of adjudicating and administering the law*[328]. In this context, the question that could be asked is how to balance all these different objectives while designing a legal rule and what the optimal degree of *vagueness* such balance would imply. Different scholars have started to treat these questions and have been arriving to various conclusions; all of them however agreeing that these problems need further analysis. For instance, Hoeppner and Lyhs (2016) while analysing behaviour of economic agents under vague standards[329] of negligence liability, confirm the reasoning of Craswell and Calfee (1986) on potential benefits of the general legal uncertainty[330]. Namely, through an experiment, they achieve the results, which state that a *sufficiently low level of standard vagueness on average induces over-compliance; after a tipping*

[328] *See* Hans-Bernd Schäfer, Rules versus Standards in Rich and Poor Countries: Precise Legal Norms as Substitutes for Human Capital in Low-Income Countries, *Supreme Court Economic Review*, Vol. 14 (2006), pp. 113-134.

[329] Here, vagueness is understood as an uncertainty a person faces in predicting how a court will apply the law. Possible consequences are associated with some residual probability of occurring. The authors give an example of an informed prediction that is associated with a 90% chance of either winning or losing at trial. In this case an economic agent is quite sure of the result of a lawsuit and the 'vagueness' is low. However, in case of a 50% chance of either winning or losing at trial, legal uncertainty ('vagueness') is highest. *See* Hoeppner, Sven; Lyhs, Laura (2016): *Behavior under vague standards: Evidence from the laboratory*, Jena Economic Research Papers, No. 2016-010, Friedrich Schiller University Jena, Jena.

[330] Namely, in terms of allowing socially beneficial activities that could have been inefficiently prohibited under a precise rule.

point, however, a further increase of standard vagueness reduces and, eventually, eliminates over-compliant choices. However, with [further] *increasing vagueness the standard loses its coordination function*[331] (Hoeppner & Lyhs, 2016). Yet, the authors attempt to show that sometimes an *immediate urge* to bring more precision in a legal standard may be erroneous, particularly when it implies high complementary costs. Even if through their research, Hoeppner and Lyhs do not suggest to design legal norms with a particular optimal degree of vagueness, they implicitly raise this question and, thus state an importance of its further study.

Coming back to the pleading standards, namely the one under ERISA, we note that many legal practitioners express a general impression of high vagueness of such standards. As Spencer (2009) writes: *the Supreme Court's revision of general* [federal civil cases] *pleading standards* (…) *has not left courts and litigants with a clear or precise understanding of what it takes to state a claim that can survive a motion to dismiss*. As a result, and with the preference of the judicial doctrine for efficiency in cost reduction of legal procedures, this state of affairs *unduly harms the right of access to courts*, what suggests that *the doctrine needs to be recalibrated to better serve the interests of justice* (Spencer, 2009). In this context, we want to clarify that our recommendations for legal correction in the ERISA pleading standard serve as the basis for the alignment of precautionary incentives of the pleading standard with the corresponding ERISA fiduciary liability standard alone. The propositions advanced in this thesis were not analysed from the point of view of their vagueness and no optimum degree of vagueness was considered in their formulation. However, we recognise that this angle of analysis represents an interesting question for further research.

[331] Hoeppner, S. and Lyhs, L., Behavior under vague standards: Evidence from the laboratory, *Jena Economic Research Papers*, No. 2016-010, Friedrich Schiller University Jena, 2016.

Today, the interpretation of the ERISA pleading standard by the courts is ardently questioned by legal professionals. However, this interpretation due to early days of its existence (the creation of the standard in 2014) was never before studied by economic scholars. The level of evidence in terms of the existence of valid effective alternative actions demanded from Plaintiffs as well as the attitude of courts towards precautionary uncertainty in the analysis of the proposed alternative actions suggest a risk-averse interpretation of the ERISA FD requirements as for the expected capacities of alternative actions to hedge a risk.

To illustrate the implications of such risk-averse interpretation of the optimal precaution under the pleading standard, we at first reconstructed the decision-making by a fiduciary under the ERISA tort liability standard within the trust fiduciary law framework. In this case, the optimal precaution would be defined with the risk-neutral attitude and a decision would be made by a fiduciary, in the presence of precautionary uncertainty, according to the following structure:

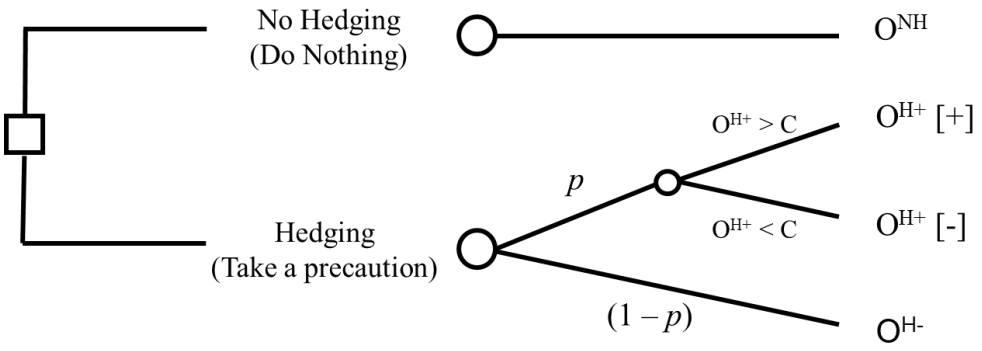

Figure 7. The decision tree of a fiduciary facing precautionary uncertainty (risk of failure of a hedging action (taken precaution)) with the consideration of the cost of precaution.

As we have shown, the decision-making under the ERISA ESOP pleading standard interpretation by the judicial doctrine implying a risk-averse attitude towards precautionary uncertainty would then deviate from the risk-neutral optimal precaution formulation in terms of qualification of O^{H+} (**Figure**

7), which represents a positive outcome of an alternative hedging action. This creates a misalignment in the interpretation of the optimal precaution measures to apply by fiduciaries under the pleading standard as opposed to the ERISA FD liability rule and, thus, induces social costs. We also identified through a Case Study that this reasoning is true not only for a particular case of Exxon lawsuit under examination, but it represents a general trend for ESG risks hedging tactics as well as for any financial risk management strategy under the ERISA ESOP requirements. Ironically, the issue that first attracted our attention by its implications for ESG risk factors unveiled through its thorough analysis a general structural problem in the interpretation of the ERISA pleading standard. Then, in order to remedy to the stated inefficiency, we provided recommendations for alignment of the precautionary incentives under the pleading standard with the optimal precautionary standard provided by the corresponding ERISA tort negligence-based liability framework.

Based on these results of our exploratory Case Study of the Exxon lawsuit, we identify a much more general question related to the application of risk attitudes in the design of the financial regulation globally. We thus reveal a fundamental question of the presence of risk-averse incentives in the financial and particularly institutional investors-related regulation. Our analysis demonstrated the inefficiencies related to risk-averse legal formulations in the concrete and specific framework of ERISA ESOP stock drop litigation, however, could we argue based on the results of our study for a global risk-neutrality as a proper basis for the general investors' Fiduciary Duty definition, and investors' financial regulation in general?

We have already evoked this point in the **General Introduction** to the thesis. The question *Should a prudent*[332] *investor be risk-averse or risk-neuter and at what degree?* is difficult to answer. The legal interpretation of the Modern Portfolio Theory lying today at the core of the fiduciary duty of prudence seems to imply investors to be generally risk-averse. The framework of decision-making under uncertainty used by most scholars is based on this assumption, namely the assumption of a constant relative risk aversion (CRRA)

[332] An investor performing her activities under the constraints of the fiduciary duty of care (prudence).

of decision-makers. We used this same framework in the definition of materiality of ESG risk factors in **Chapter II**. However, it is now not clear if the financial regulation should continue to follow this pattern and incentivise risk-averse behaviour by institutional investors. The current phenomenon of excessive legal incentives to risk aversion was raised by many financial professionals[333], regulatory bodies and some scholars. Many of them explain this tendency in the financial regulation as a consequence of financial difficulties of 2008 and the attempts by regulators to prevent possible future crises. Others question heavily this approach[334]. Namely, L. Boon et al. (2015) investigate the effect of financial regulation on risk appetite of pension funds. The authors find that regulatory factors (risk-based capital requirements and mark-to-market valuation) are more economically significant than funds' characteristics in shaping the asset allocation choices by leading to a reduction of pension funds' risky asset exposure by about 7%[335], which could negatively affect their capacity to pay off their long-term liabilities. As pension funds' regulation becomes progressively more risk-aware and safety-focused, investment strategies become generally more risk-averse that, they might have been on the basis of a pension fund's specific risk profile alone. This presents potential difficulties for the realisation of proper asset allocation and management[336] aiming to secure risks related to pensions' liabilities.

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[333] *See* for instance the Article *HSBC chairman warns against banking reforms*, The Guardian, August, 4 (2014): *The HSBC Chairman* [Douglas Flint] *also expressed his concern that the new mood in banking may have swing too far towards risk aversion, threatening what he calls the eco-system which supports global investment. Douglas Flint warns that banking reforms due in 2019 could deter banks from taking even the most minor risks.* The article is available online: https://www.theguardian.com/business/2014/aug/04/hsbc-chairman-warns-against-ringfence-banks

[334] *See* Jay Youngdahl, Chapter 3 in *The Cambridge Handbook of Institutional Investment and Fiduciary Duty*, pp. 20-28: *As with the upheaval in investment theory after the troubles of 1973 and 1974, which helped lead to the adoption of the MPT, the financial difficulties of 2008 exposed serious problems in today's predominant theory of investing and risk aversion*.

[335] L. Boon et al., *Regulation and Pension Fund Risk-Taking*, Working Paper, Amundi, October 2015 (revised version). In particular, risk-based capital requirements and mark-to-market valuation are associated with reducing risky asset exposure by about 7%. Most of the decline in investment risk-taking concerns equities.

[336] A long-term institutional investor should be willing to accept moderate levels of risk, short-term volatility and potential permanent capital loss and not divest from long-term investments in the face of market pressure. (See Asian Development Bank, 2016; See also A. Monk et al., Reframing Finance: new models of long-term investment management, Stanford University Press, 2017)

These difficulties related to a risk-averse orientation of financial regulation seem to be even more present in case of consideration of ESG risks within the framework of investment and risk management decision-making by institutional investors, particularly by pension schemes. Several studies identified risk aversion in financial institutions as one of the main barriers for accounting for climate change-related risks in investment management and the economy in general[337]. And, as we evoked in the **Introduction** and **Chapter I** of this research, the early-stage character of existing ESG risks hedging methodologies contributes to the uncertainty related to the effectiveness of such measures and to mistrust experienced by some investors towards them. The question is very topical and presents today one of the main challenges to be tackled on the way of introducing sustainable development preoccupations into investors' decision-making. It is situated right in between the global economic financial stability problematics and the efficient investment management by institutional investors in the face of new ESG risks in relation to their long-term liabilities. Thus, this question of what precautionary signals should be given by financial regulatory authorities to investors and towards what interpretation of efficient behaviour the financial market should be oriented with the help of the regulation is still to be answered.

By analysing the situation of misalignment of incentives provided by different standards, we touch only slightly upon this fundamental problem, which is live and ardent for the modern financial regulation worldwide. We thus state, in response to our question on the possibilities to generalise the results of this Case Study and to argue for a general risk-neutral interpretations of the standards related to financial regulation, that such generalisation is not accepted here. A single case study does not represent a valid basis for such generalisation and further thorough examination of this question is required to form a proper opinion on this issue.

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[337] IPCC (2000) and UNEP (2001) state among the barriers that prevent the diffusion of key technologies relevant to climate change business limitations, such as risk aversion in financial institutions and institutional limitations such as insufficient legal protection and inadequate environmental codes and standards, etc. *See* also N. Stern, *The Economics of Climate Change: The Stern Review*, Cambridge University Press, 2007. The paper is available here:

http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf

On the other hand, we however note that another generalisation of our results could logically be possible. Despite the fact that the case of ERISA ESOP litigation and of the related liability standard is quite unique, we still can argue that the question of the effectiveness of a hedging action against an ESG risk could be relevant for the qualification of an investor's liability beyond the specific framework of the alternative action test (AAT) studied here. It can contribute generally in the definition of a prudent investment and risk management decision under the global representation of the modern investors' FD. Even in the absence of the formal AAT or other assimilated regulatory requirements, the uncertainty about the possibilities to properly and effectively manage ESG risks, together with the uncertainty about the efficiency of ESG risks metrics in defining what risk is material, will contribute to the definition of what a FD Prudent Investor's decision should look like. Simply saying, an unmanaged material ESG risk would increase investments' exposure to losses, while an effectively managed material ESG risk would (ideally) leave it intact; meaning that an effective management would counteract the materiality of the risk in terms of possibilities of losses for a fund. Thus, the two elements (risks' materiality and effectiveness of management) would determine the Fiduciary Duty pattern of investors' decision-making in the face of ESG risk factors.

GENERAL CONCLUSION

By exploring in this research project based on the most recent legal developments and evidence the rather new question of ESG risks consideration by institutional investors as part of their fiduciary duty (FD) obligations, we discovered two fundamental elements for the definition of such ESG FD concept. First of all, we identified that in order to be considered by investors in their investment risk management decision-making process governed by their fiduciary duties, an ESG risk must be viewed as *material*, or important for such decision-making. Then, we established that the management or *hedging* of the considered material ESG risks factor would be mandatory required from an investor under her fiduciary duties in case when the hedging technic would be qualified as presenting sufficient *effectiveness*, i.e. sufficient likelihood of its success against the risk. Thus, we now could state that the general decision-making process by an institutional investor within the legal framework of the fiduciary duties (FD), particularly the duty of prudence (care) would present the following pattern (**Figure 8**):

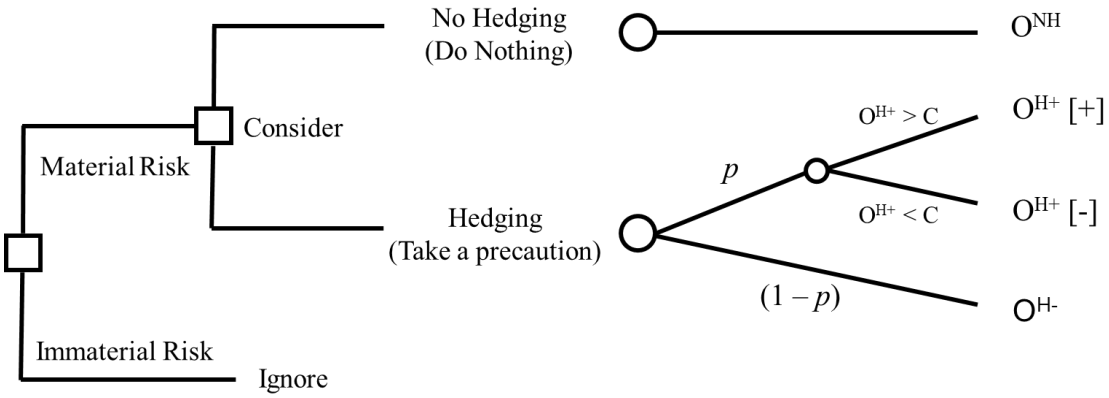

Figure 8. The decision tree of a fiduciary in the face of an ESG risk and of the precautionary uncertainty (risk of failure of a hedging action) with the consideration of the cost of precaution. The decision tree is designed in compliance with the current requirements of the modern interpretations of the fiduciary duty of investors.

By that, we fulfilled the main goal of this research project – clarification of investors' duties in terms of management of environmental, social and governance-related (ESG) risks of their investments, by determining the expected investors risk management decision-making framework under the constraints of their FD. Thus, given the current uncertainties raised by many market practitioners about the possibilities and the obligation to manage ESG risk factors by investors as fiduciaries, we provide investors with a concrete decision-making pattern in the face of an ESG risks as determined by the requirements of the investors' fiduciary duties (FD).

Hereafter, we summarize the concrete results obtained in our thesis, which would define this pattern, as well as present a perspective on their interpretation within the related regulatory and economic context. We then suggest some further research questions that could be explored further in relation to the subject of our study.

1. SUMMARY OF THE MAIN RESULTS

In our thesis, to answer the global question to what extent ESG risks management by investors is allowed or even required within the legal framework of fiduciary duty requirements, we studies two main problematics issued from the analysis of the most recent legal developments in this sphere. The first one relates to the question whether ESG risk factors should be managed by fiduciaries (investors) and if yes, whether all ESG risk factors (in all their interpretations expressed in the **Introduction** and **Chapter I** of the thesis) should be hedged. The second one concerns the question whether every ESG risk management tactics would be compliant with the standard of investors' liability under the FD rule. We then concluded that together, these elements determine a proper behaviour of an investor as a fiduciary in the face of an ESG risk factor. To arrive to this conclusion, we performed our research in three stages:

The First Part of our research project allowed us to discover in the light of the most recent legal developments in the field of investors' FD, the

problematics related to ESG risks identification, measurement as well as to their effective management under the constraints of investors' FD obligations. By that, we revealed the two fundamental elements that contribute to the definition of the place that ESG risk factors take in the investment risk management decision-making as governed by investors' FD. Particularly, in the **Chapter I** of the thesis, we presented a State of the Art on legal FD frameworks in the EU and in the US to provide a relevant context for our study. We then conducted an analysis of the elements of the legal structure of fiduciary duties, precisely in the light of the most recent regulatory and judicial developments in these legal zones on the subject of investors' FD and ESG risks management. This analysis contributes to the research on ESG FD[338] of investors with two new aspects never explored before. These are: a dynamic analytical approach based on the examination of the most recent and still ongoing regulatory and judicial developments on the ESG FD in the EU and the US; and a study of the question of investors' liability under the FD in case of ESG risks management. As a result, this analysis allowed us to formulate two new problems related to ESG consideration by investors in their decision-making under the FD rule: an uncertain definition of ESG risks materiality under the FD rule and a questionable qualification of the effectiveness of ESG risks management measures under the FD liability standard. We then revealed that the existing FD legal frameworks alone did not provide sufficient elements for an efficient treatment of these problematics. Therefore, we identified the need for a further examination of these issues and provided the first version of such analysis in the following chapters of the thesis. Thus, we devoted **Chapter II** of the thesis to a proper definition of ESG risk factors' materiality and **Chapter III** to the clarification of the qualification of the effectiveness of ESG risks management under the FD liability standard.

Therefore, the second part of our research is dedicated to the definition of the concept of materiality as applied to ESG risk factors under

[338] The term *ESG FD* as we presented in our thesis corresponds to the concept of investors' fiduciary duties that would imply a mandatory ESG risks management by investors.

the constraints of investors' FD. As we noted previously, through the analysis of the current developments in the FD regulation in **Chapter I** of the thesis (namely in the EU regulation), we found that this FD legal framework states that an ESG risk factor should be considered by an investor under in her investment and risk management if such risk is material. However, given the absence of a concrete legal definition of what ESG risk is material under the FD rule and considering a variety of possible interpretations of this concept (material in terms of its financial impact on investments, its contribution to the global systemic risk or its associated externalities in real economy, etc.) we stated the need to define *materiality*. Consequently, in the **Chapter II** of the thesis we attempted to respond to this need by establishing a concrete definition of materiality for ESG risk factors under the constraints of the FD regulation. To do that, we used the theory of decision-making under uncertainty in order to reconstruct the decision-making process by an investor under the constraints of the fiduciary duty legal standards of conduct and to develop a concrete definition of materiality of ESG risk factors. As a result, we proposed a definition of materiality as allowed by the current FD legal system and demonstrated the limits of its application in case of ESG risks management by investors. Moreover, we found that some specific aspects of ESG risk factors, particularly long-termism (i.e. the occurrence of outcomes associated with an ESG risk in the long-term) could also be considered under the current FD rule and proposed general principles for the consideration of material long-term ESG risks under the FD constraints. We note however, that the results of this theoretical analysis show clearly that within the FD legal framework ESG risks in their materiality are assimilated with conventional financial risk factors. This means that some specific aspects of ESG risk factors like long-termism or contribution to systemic risks would only partially be accepted under the FD rule.

The third part of our research treats the problem of the qualification of ESG risk management tactics applied by investors under the FD liability standard. Having provided through the concept of materiality a basis for identification of ESG risks, the management of which in required by the investors' FD obligations, we then turned our eyes to the management action itself and the related problematics. To explore this question in **Chapter III** of

the thesis, we performed a Case Study based on the analysis of the first legal case in the domain of ESG risks management by an investor under the FD standard – the Exxon Mobil lawsuit (2016-2019) in the US. Within this case study, we continued the analysis of investors' decision-making under the FD rule in the context of the theory of decision-making under uncertainty by having focused this time on the question of effectiveness of a risk management measure and its qualification in court in relation to investors' FD liability standard and the required by it level of precaution. For that, we first modelled under the constraints investors' fiduciary duties the representation of an optimal choice of management (hedging) action in the face of an ESG risk. Then, based on the evidence from the Exxon lawsuit, we examined the qualification of an investor's risk management action by the judge in comparison with the formulated optimal management action choice to define the investor's potential liability. Generally, we found that a choice of hedging action against a material ESG risk represents a fundamental element of investors' decision-making process required under the FD rule. We thus argue that this element should be considered in the definition of investors' liability under the FD rule and, thus, in the definition of the FD rule itself. On the other hand, and specifically for the legal case of Exxon under analysis referring to the US pension' regulation FD rule (ERISA), we established that there exists a misalignment between the choice of the optimal risk management action under the FD legal rule of liability and the qualification of this choice in court (by the judicial doctrine). We explained this misalignment with the existence of precautionary uncertainty, i.e. uncertainty about the effectiveness of a risk hedging action, and with a risk-averse qualification of investor's choice of hedging action by the judge in court in the presence of this uncertainty. Such risk-averse interpretation incentives a sub-optimal choice of a hedging action by an investor in the face of an ESG risk; while the optimal choice would be defined by the general risk-neutral ERISA liability rule. We then identified that this misalignment as identified in case of the Exxon lawsuit reveals a general problem relevant for all litigation cases of this kind (ERISA ESOP stock drop cases). Therefore, we generalised our observation to all ERISA ESOP stock drop cases and demonstrated that this misalignment generates social costs on different levels of the FD legal value chain. We then concluded by proposing a regulatory reform allowing for the alignment of the FD ERISA ESOP judicial doctrine standard with the optimal

liability standard to provide investors with a single signal to apply efficient precaution, i.e. to choose an optimal hedging action in the face of ESG risks. We note however that these conclusions related to the need for risk-neutrality in the interpretation by the judicial doctrine of the ERISA FD liability to provide a signal to the efficient choice of a hedging action could not be easily generalised. We do not advocate in this research for a general risk-neutral design of the financial regulation globally, but state a need to examine this question.

Let us point out here that the concept of precautionary uncertainty and more generally the question of the qualification of an ESG risk management action within the framework of ESG FD of investors was not discussed earlier in the relevant literature. The Case Study of the Exxon lawsuit provided us with a new reading of the FD and revealed this new element, which together with the materiality of ESG risks is fundamental for the definition of investors' FD.

2. ECONOMIC POLICY IMPLICATIONS

At the beginning of this research, we stated that the most common and widely spread interpretation of investor's fiduciary duties today is the one provided by American law given that at its basis the FD standard is the concept of the Anglo-Saxon law (common law). We also explained the processes of so-stated harmonisation of the FD requirements with the common law concept spreading around. Thus, based on these observations, we state here that, in case of the examined in this research work the EU FD reform and the US case of FD litigation, the latter one could inform the first one and vice versa on the subjects of materiality of ESG risks factors and the problematics related to their management by investors.

Particularly, we consider that the EU regulator in the creation of the European FD rule could be informed on the basis of the US Exxon litigation case of the importance of consideration of the effectiveness of a risk management action for the definition of investors' liability under the coming FD rule. In this case, if the objective of the EU regulator would be to incentivise a proper management of ESG risks (efficient precautionary measures in the

presence of a risk), the regulator should consider risk-neutrality in the formulation of such incentives through the FD standard of liability implied in the trust fiduciary rule of law. Also, the EU member-states should be informed on this subject to be able to transpose and efficiently implement the EU FD rule in their national context.

On the other hand, this same information could be used by the US financial, namely, pension funds regulator (the Department of Labor (DOL)) and the US judicial regulator (the Supreme Court) to attempt to remedy to inefficient judgments in case of the ERISA ESOP stock drop litigation. This situation became today a real issue stating clear evidence on the inefficient ruling of these cases by the current US ERISA judicial doctrine. With the objective to re-establish optimal precautionary incentives for investment risk management and their efficient enforcement in court, we advocate for a risk-neutral approach in the qualification of risk management action in court and provide in this research some propositions for correction of a risk-averse interpretation of the liability standard by the judicial doctrine.

Considering the definition of materiality for ESG risk factors, we note that this concept was first raised in the context of the coming EU FD regulatory proposition as one of the determinant elements of investors' FD. However, the regulator did not explicitly specify what defines materiality of an ESG risk factor. Our study attempted to resolve this uncertainty by providing all possible aspects of this definition in the context of the currently accepted interpretation of the FD rule. If the EU regulator agrees with the interpretation of ESG risks' materiality as it is formed today within the FD legal constraints, i.e. where ESG risks are assimilated with financial risks and their materiality is understood as a financial impact of a risk on investments, the formulation of the ESG FD rule as stated in the regulatory proposition is appropriate. However, if the regulatory objective of this proposition would be to encourage the consideration by investors of such interpretations of ESG risks materiality as the one related to the negative externalities of investment activities in the real economy, then the FD rule should be reviewed profoundly.

3. FURTHER RESEARCH PERSPECTIVE

Many research questions concerning this new concept of ESG FD or fiduciary duties of investors implying the management by investors of ESG risks are worth further study. In a direct relation to our research project, we could name several questions that could be analysed further in more detail. Particularly, in relation to the definition of materiality of ESG risks factors a lot of space for further research stays when it comes to the exploration of various definitions of ESG risks materiality, including the one related to the incorporation of negative externalities in real economy. The next question would be how these interpretations could be incorporated into the legal concept of FD of investors, including the consequences and the general interest for such incorporation; other legal or economic incentives could be conceived instead of ESG FD as potentially more effective for ESG risk management incentives. A huge research field also represents the issue of the validity of current ESG risks metrics, leaving space for a design of new measuring methodologies and applied quantitative analysis of outcomes. There are also questions related to the effectiveness of ESG risk hedging tactics stating the need for further improvements in risk management methods. All these potential research fields only count some quite uncertain and early-stage solutions that need further development.

Coming closer to the Law & Economics analysis and farther from our specific ESG FD problem, we could state such global questions that could be raised based on our analysis as the design of regulatory incentives for ESG risks and opportunities management by investors and more generally the introduction of sustainable development preoccupation in the financial and securities regulation globally. Here, such Law and Economics issues would be tackled as the degree of precision or vagueness of a rule of law, its optimal formulation and consequences on individual investor's behaviour, etc. Another important question, as we showed it in **Chapter III** of the research, would relate to a particular attitude towards uncertainty (risk-aversion or neutrality, etc.) a rule of law should be based on to provide an incentive to the most optimal investment and risk management decision, particularly, by institutional investors.

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Table of Appendices

APPENDIX 1

Here we present various definitions and classifications of sustainability (ESG) risks.

Today, ESG risk methodologies are industry- and company size- specific (i.e. in the analysis and definition of ESG risk size and industry factors are considered). Some even try to integrate the concept of timing (term of the risk occurrence: short-term, mid- or long term). Few make a distinction in their methodologies between ESG risks taken in the context of debt or equity type investments.

ESG methodologies and ratings are based on the information publicly disclosed by companies targeted for investment, which is analysed and translated with the help of ESG rating/classifications into information that is then used by investors in the analysis of their investments and in their investment decision-making process.

To illustrate ESG methodologies we give two examples (selected randomly out of a variety of actors providing ESG-related methodologies). We note that generally methodologies vary largely from one industry professional to another, what represents another difficulty for the development of sustainable finance and investment.

For instance, **Fitch**[339] offers an industry-specific and debt instruments specific (particular for credit rating) ESG risks methodology to analyse both corporate issuers (companies) and sovereign issuers (countries). Namely, among ESG elements driving corporate issuer credit impact Fitch distinguishes:

Environmental Elements
EAQ – Greenhouse Gas Emissions/Air Quality
EFM – Energy Management
EWT – Water & Wastewater Management
EHZ – Waste & Hazardous Materials Management, Ecological Impacts
EIM – Exposure to Environmental Impact

Social Elements
SCR – Community Relations; Social Access & Affordability
SCW – Customer Welfare, Product Safety, Privacy & Data Security
SLB – Labor Relations & Practices
SEW – Employee Well-Being
SIM – Exposure to Social Impacts

Governance Elements
GEX – Strategy Implementation, Operational Execution
GGV – Governance Structure
GST – Group Structure
GTR – Financial Transparency

In case of sovereign issuers the ESG risk criteria are:

Environmental Elements
EAQ – GHG Emissions and Air Quality
EFM – Energy Management
EWR – Water Resources and Management
EBN – Biodiversity and Natural Resource Management
ENC – Natural Disasters & Climate Change

Social Elements
SHR – Human Rights and Political Freedoms
SHD – Human Development, Health & Education
SEI – Employment & Income Equality
SPS – Public Safety and Security
SDT – Demographic Trends

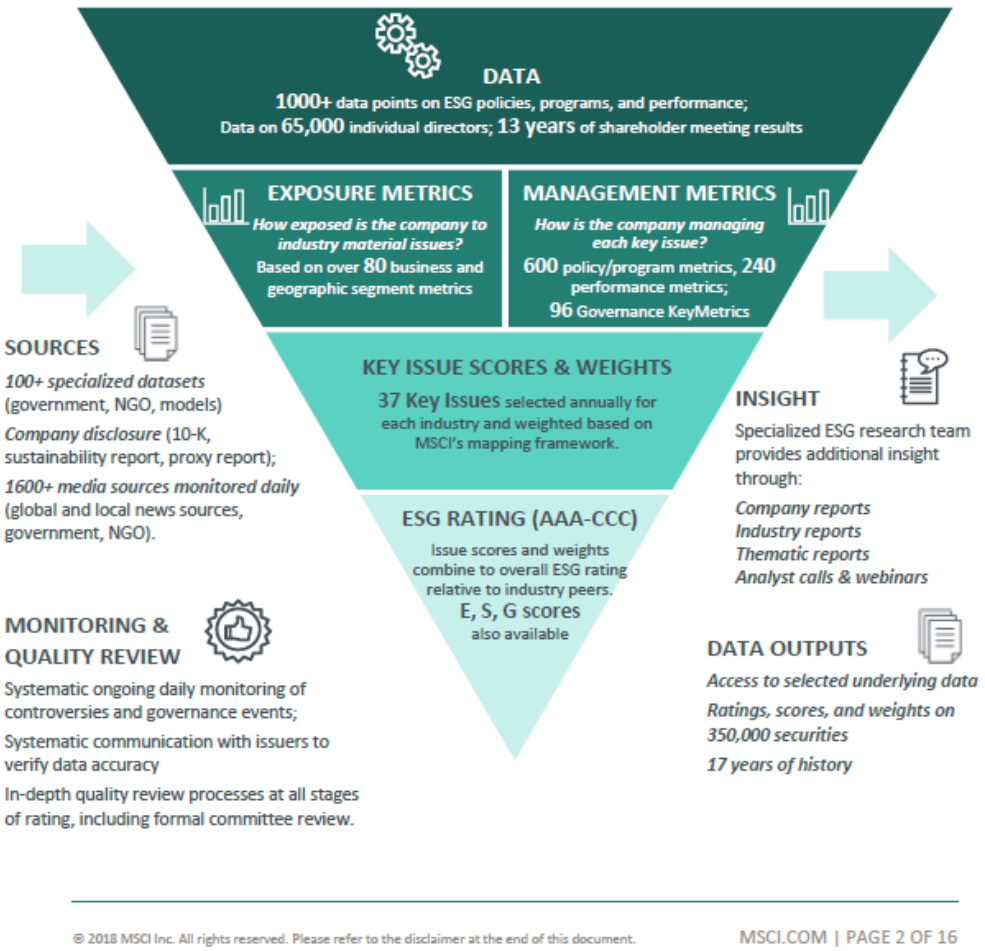
Governance Elements
GPS – Political Stability and Rights
GRL – Rule of Law, Institutional & Regulatory Quality, Control of Corruption
GIR – International Relations and Trade
GCR – Creditor Rights
GDQ – Data Quality and Transparency

Source: Fitch Ratings

[339] See more information on the official Fitch website: https://www.fitchratings.com/site/esg

MSCI[340] offers an industry-specific, company size-specific, timing oriented (distinction between short-term and long-term ESG risk and opportunity factors) approach in the context of equity and debt investments.

Figure 1: ESG Rating Framework and Process Overview



[340] *See* Report, *MSCI ESG Rating Methodology*, Executive Summary, MSCI ESG Research, April 2018

Figure 1 MSCI ESG Key Issue Hierarchy

3 Pillars	10 Themes	37 ESG Key Issues	
Environment	Climate Change	Carbon Emissions	Financing Environmental Impact
		Product Carbon Footprint	Climate Change Vulnerability
	Natural Resources	Water Stress	Raw Material Sourcing
		Biodiversity & Land Use	
	Pollution & Waste	Toxic Emissions & Waste	Electronic Waste
		Packaging Material & Waste	
	Environmental Opportunities	Opportunities in Clean Tech	Opp's in Renewable Energy
		Opportunities in Green Building	
Social	Human Capital	Labor Management	Human Capital Development
		Health & Safety	Supply Chain Labor Standards
	Product Liability	Product Safety & Quality	Privacy & Data Security
		Chemical Safety	Responsible Investment
		Financial Product Safety	Health & Demographic Risk
	Stakeholder Opposition	Controversial Sourcing	
	Social Opportunities	Access to Communications	Access to Health Care
		Access to Finance	Opp's in Nutrition & Health
Governance	Corporate Governance*	Board*	Ownership*
		Pay*	Accounting*
	Corporate Behavior	Business Ethics	Corruption & Instability
		Anti-Competitive Practices	Financial System Instability
		Tax Transparency	

** Corporate Governance Theme carries weight in the ESG Rating model for all companies. In 2018, we introduce sub-scores for each of the four underlying issues: Board, Pay, Ownership, and Accounting.*

Figure 2 Framework for Setting Key Issue Weights

		Expected Time frame for Risk/Opportunity to Materialize	
		Short-Term (<2 years)	Long-Term (5+ years)
Level of Contribution to Environmental or Social Impact	Industry is major contributor to impact	Highest Weight	
	Industry is minor contributor to impact		Lowest Weight

The framework is such that a Key Issue defined as "High Impact" and "Short-Term" would be weighted three times higher than a Key Issue defined as "Low Impact" and "Long-Term".

- **Level of contribution to social or environmental externality**: Similar to the process outlined above, each GICS Sub-Industry is assigned a "High", "Medium", or "Low" impact for each Key Issue based on our analysis of relevant data (e.g. average carbon emissions intensity).
- **Expected time horizon of risk / opportunity**: The time horizon of each Key Issue (Short-Term, Medium-Term, Long-Term) is classified based on the type of risk or opportunity that each Key Issue presents to companies.

APPENDIX 2

We present here:

(1) An extract of *The Global Risks Report 2019*, 14th Edition, World Economic Forum (WEF) in partnership with Marsh & McLennan Companies and Zurich Insurance Group, January 2019, pp. 5-8.

The report offers an extensive overview of risks (as well as their evolution over time) that the global economy faces today. The report shows the rising importance for the global economy of such sustainability related risk factors as climate change and extreme weather events, biodiversity loss, large-scale involuntary migration, un/under-employment, food crises, water crises, adverse consequences of hi-tech advances, etc.

Please, see an extract of the Report on the following pages of Annex 2.

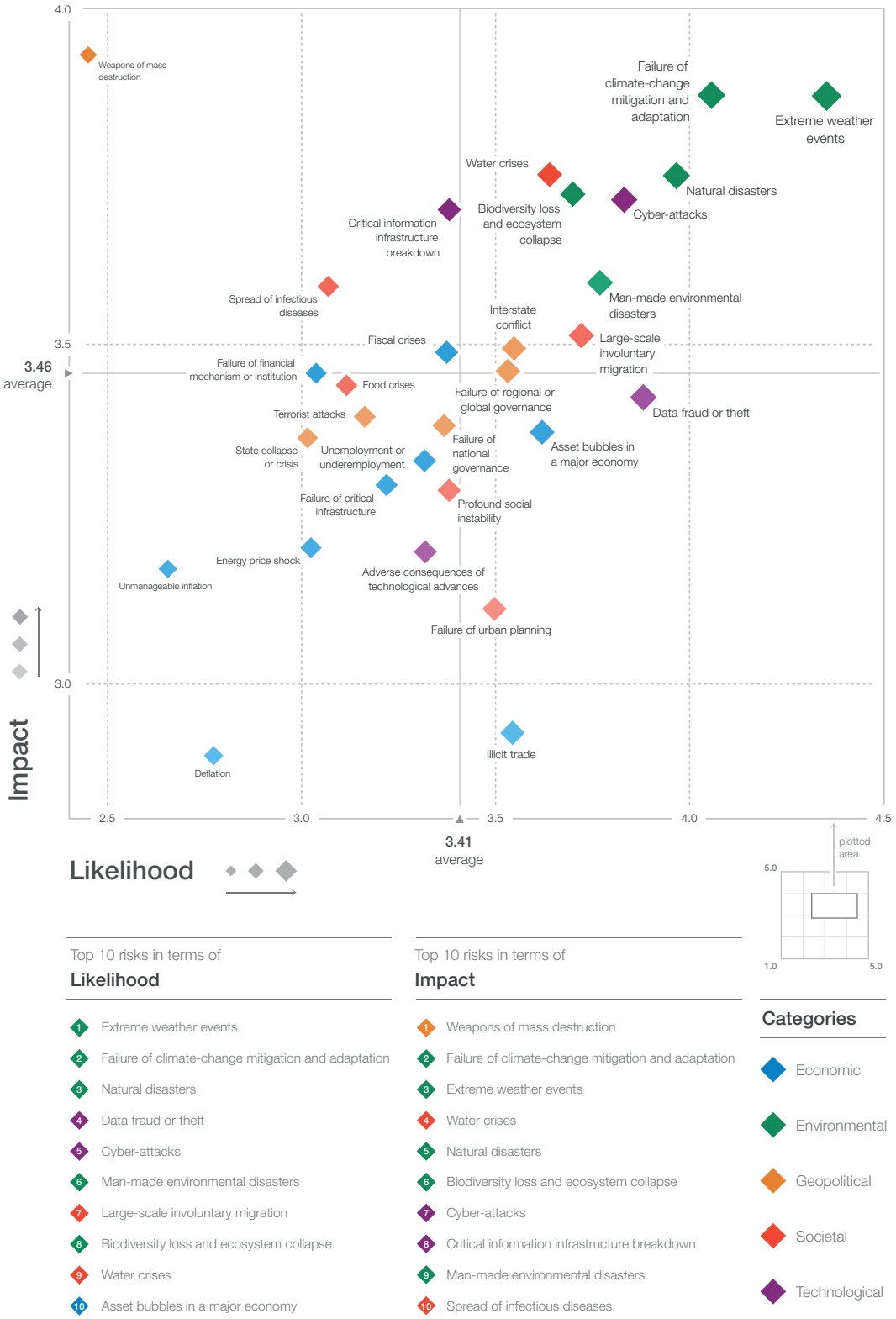
(2) The table of material sustainability risks for financial institutions developed by Sustainability Accounting Standards Board (SASB) via their SASB Materiality Map[341].

According to this Map, Financial Institutions face multiple sustainability risks related to Social Capital, Human Capital, Business Model & Innovation as well as to Leadership and Governance risk categories. Particularly, investors are exposed to sustainability issues concerning new sustainability financial product development, employee engagement and enhanced human resources management based on diversity and inclusion as well as management of systemic risk as part of investment strategy, etc.

Please, see the full table of material sustainability risks for different types of financial institutions on the SASB website: https://www.sasb.org/standards-overview/materiality-map/.

[341] The SASB Materiality Map is available here: https://materiality.sasb.org/

Figure I: The Global Risks Landscape 2019



Top 10 risks in terms of
Likelihood

1. Extreme weather events
2. Failure of climate-change mitigation and adaptation
3. Natural disasters
4. Data fraud or theft
5. Cyber-attacks
6. Man-made environmental disasters
7. Large-scale involuntary migration
8. Biodiversity loss and ecosystem collapse
9. Water crises
10. Asset bubbles in a major economy

Top 10 risks in terms of
Impact

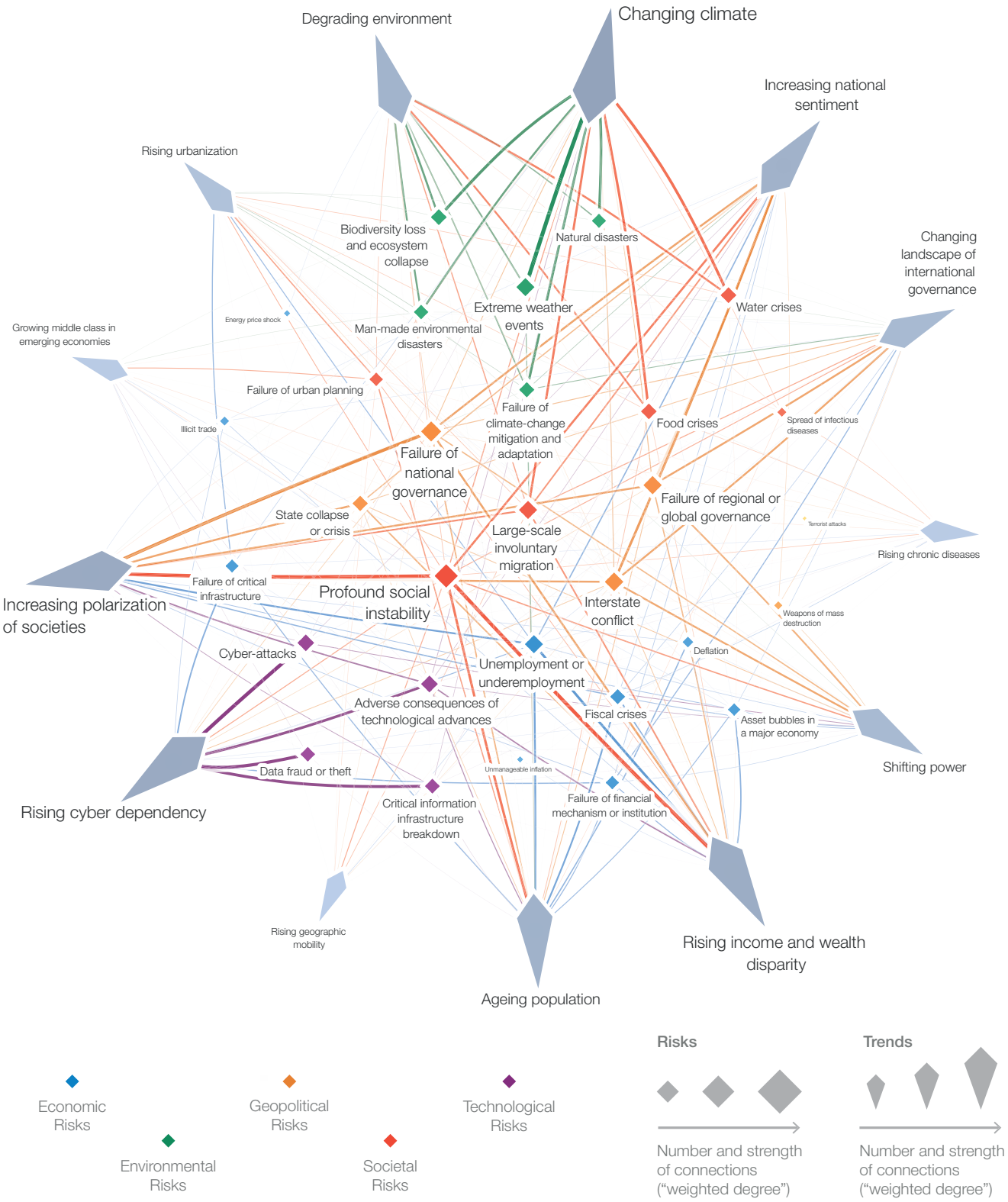
1. Weapons of mass destruction
2. Failure of climate-change mitigation and adaptation
3. Extreme weather events
4. Water crises
5. Natural disasters
6. Biodiversity loss and ecosystem collapse
7. Cyber-attacks
8. Critical information infrastructure breakdown
9. Man-made environmental disasters
10. Spread of infectious diseases

Categories

- Economic
- Environmental
- Geopolitical
- Societal
- Technological

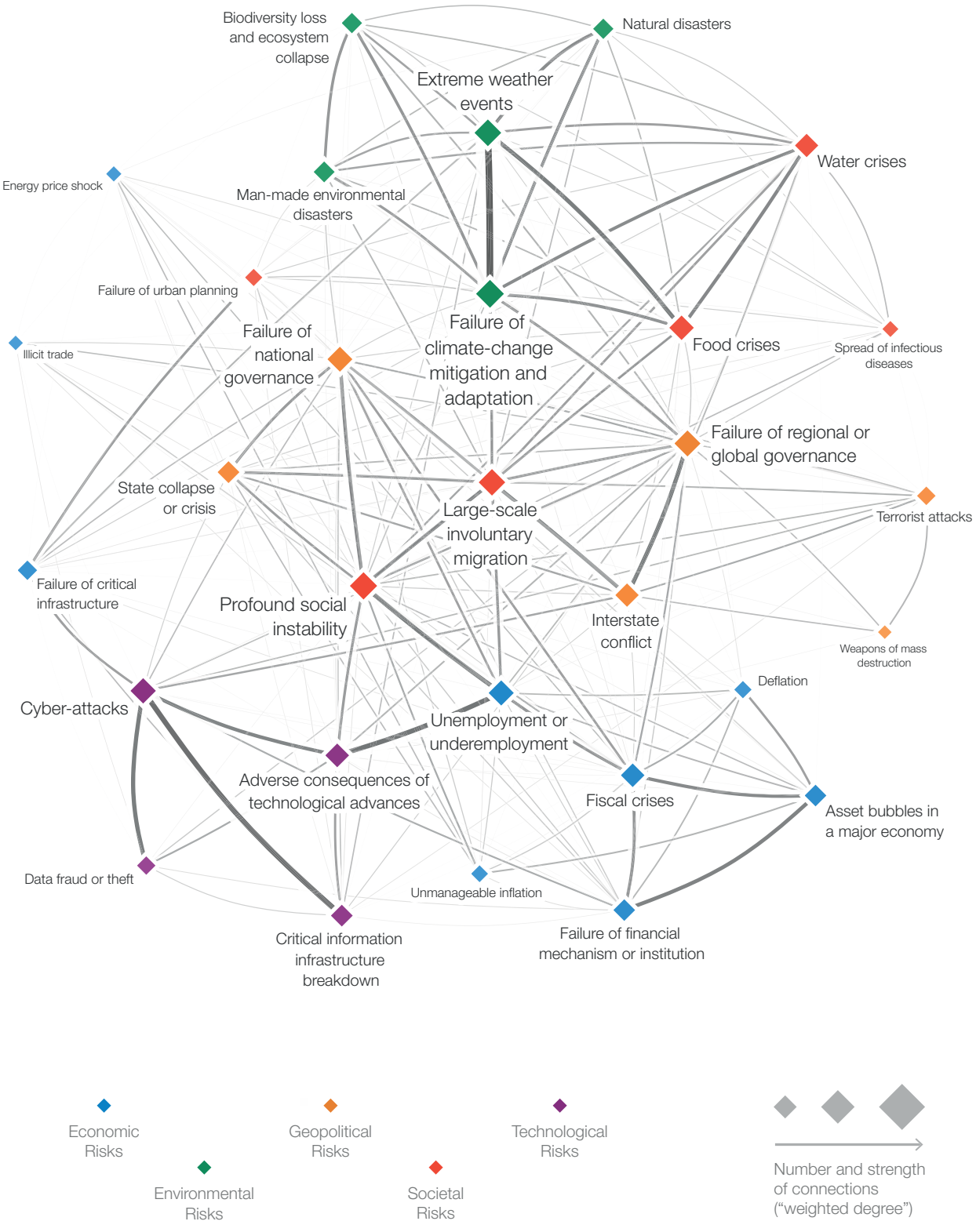
Source: World Economic Forum Global Risks Perception Survey 2018–2019.
Note: Survey respondents were asked to assess the likelihood of the individual global risk on a scale of 1 to 5, 1 representing a risk that is very unlikely to happen and 5 a risk that is very likely to occur. They also assess the impact on each global risk on a scale of 1 to 5 (1: minimal impact, 2: minor impact, 3: moderate impact, 4: severe impact and 5: catastrophic impact). See Appendix B for more details. To ensure legibility, the names of the global risks are abbreviated; see Appendix A for the full name and description.

Figure II: The Risks-Trends Interconnections Map 2019



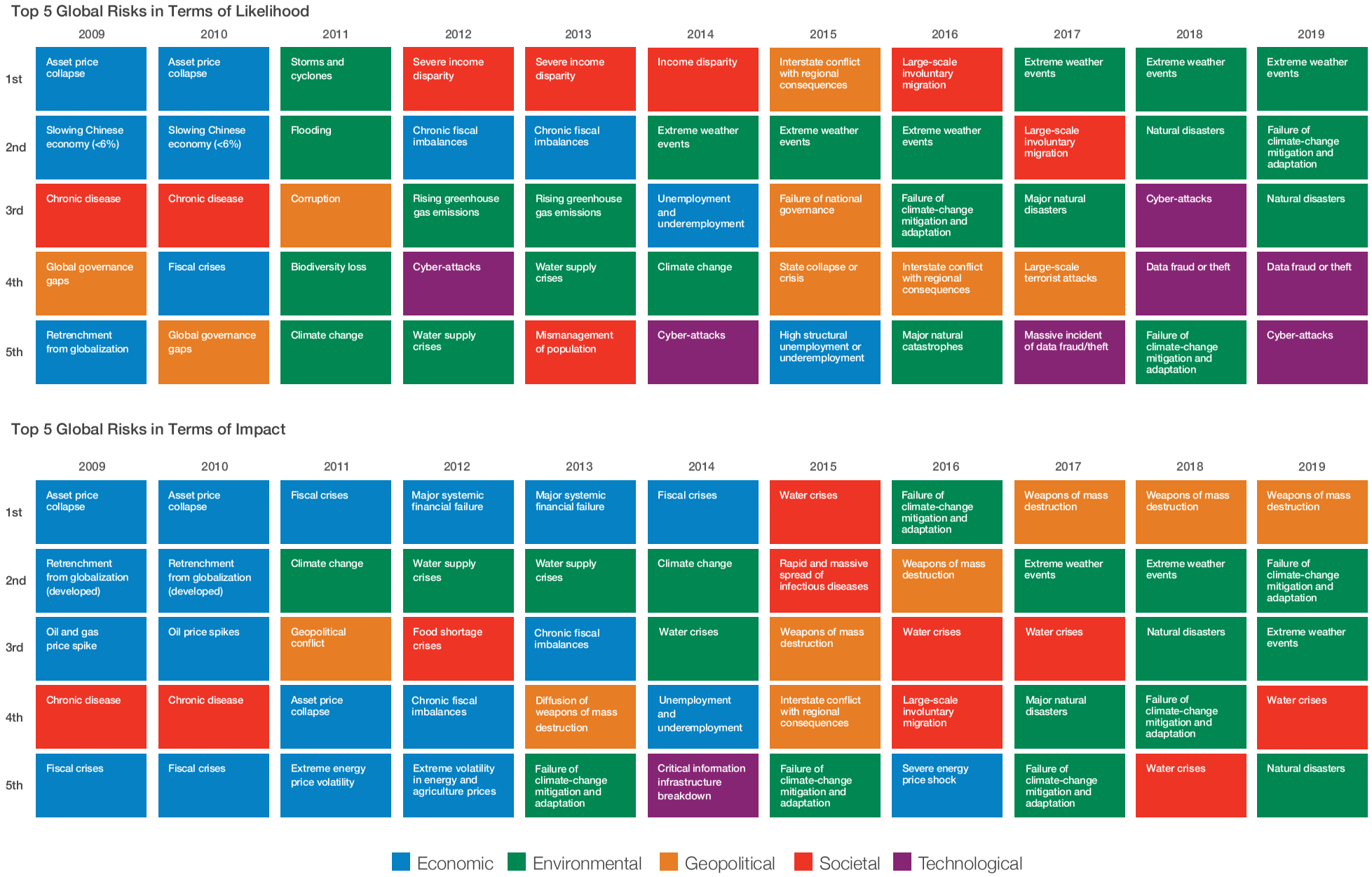
Source: World Economic Forum Global Risks Perception Survey 2018–2019.
Note: Survey respondents were asked to select the three trends that are the most important in shaping global development in the next 10 years. For each of the three trends identified, respondents were asked to select the risks that are most strongly driven by those trends. See Appendix B for more details. To ensure legibility, the names of the global risks are abbreviated; see Appendix A for the full name and description.

Figure III: The Global Risks Interconnections Map 2019



Source: World Economic Forum Global Risks Perception Survey 2018–2019.
Note: Survey respondents were asked to select up to six pairs of global risks they believe to be most interconnected. See Appendix B for more details. To ensure legibility, the names of the global risks are abbreviated; see Appendix A for the full name and description.

Figure IV: The Evolving Risks Landscape, 2009 – 2019



Source: World Economic Forum 2009–2019, Global Risks Reports.
Note: Global risks may not be strictly comparable across years, as definitions and the set of global risks have evolved with new issues emerging on the 10-year horizon. For example, cyberattacks, income disparity and unemployment entered the set of global risks in 2012. Some global risks were reclassified: water crises and rising income disparity were re-categorized first as societal risks and then as a trend in the 2015 and 2016 *Global Risks Reports*, respectively.

APPENDIX 3

Ambiguity and Materiality Definition

Here we consider the presence of ambiguity about potential outcomes of an ESG risk in the formulation of the materiality threshold as defined previously in the **Chapter II** of the present thesis through the framework of decision-making under uncertainty. To illustrate this problematics in a simple, visual way, we use the same example of Exxon in the role of a fiduciary used in the **Chapter II**.

Under the general assumption of ambiguity-neutrality of risk-averse decision-makers[342] we thus proceed to the formulation of the materiality threshold in the presence of ambiguity.

We assume this time that there is no sign of a coming climate-change-related legislation or of any other alternative market measure (carbon prices increase, etc.) and opinions on the market differ on the magnitude and the probability of the potential outcomes of the stranded assets risk. Exxon knows however that the retirement fund it managers is exposed to this ESG risk, as there is a stock of stranded assets associated to a number of invested companies, first of all Exxon itself.

Exxon can measure the fund's exposure (at least approximately) based on its own internal estimations (when it comes to Exxon itself) and publicly available information published by the investees. At the same time, our investor does not know the probabilities that this ESG risk will occur and affect the fund's performance.[343] Still, Exxon faces some evidence (founded mostly on its admitted exposure to the risk and its market feeling and experience) that it **could** happen and the risk **could** occur. Therefore, the information about the

[342] *See* MSc Szakdolgozat, Írta: Bayer Péter, Eötvös Loránd Tudományegyetem, Természettudományi Kar, *Ambiguity neutrality*, Working paper, 2013, 41 p.: *ambiguity neutral decision makers are uncertainty averse, because additive subjective probabilities are convex.*

[343] We consider a short-term perspective, as the investment management decision is taken at present time based on available information.

possible outcome of this ESG risk is ambiguous (as depends on multiple factors unknown today).

As we know, our investor, with respect to his/her fiduciary duties, must incorporate the available information about the ESG risk in his /her decision-making iff this information is material for the fund's risk-adjusted performance.

To analyse the definition of materiality threshold in the presence of ambiguity, we first translate the initial model on which we were based until now (proposed by Ro in 1982) into the framework of the Smooth Ambiguity Model by Klibanoff et al. (2005) or the KMM model as we will call it throughout this work. We, thus, assume at this point that our investor behaves according the axioms of the KMM. Consequently, we introduce ambiguity into the initial Ro's model using the KMM framework and transform it accordingly. We thus reconstruct the global setting of the decision-making in the presence of ambiguity.

Considering our example taken within the KMM model framework, the relevant ambiguity field can be characterised as follows:

There exist a state space $\boldsymbol{S}$ (all possible values of the fund's final risk-adjusted performance); an outcome space $\boldsymbol{X}$ (all possible values of final loss given the fund's risk exposure); a set of possible acts $\boldsymbol{F}$ on the state space $\boldsymbol{S}$ that map every $\boldsymbol{s}$ to its corresponding consequence $\boldsymbol{x}$; and a probability function $\boldsymbol{\pi(s)}$, all finite and continuous. In its turn, $\boldsymbol{\pi(s)}$ is an element of $\boldsymbol{\Pi}$ that is the total set of all possible probability distributions $\boldsymbol{\pi}$ over $\boldsymbol{S}$.

The decision maker (DM) performs an act $\boldsymbol{f} \in \boldsymbol{F}$ that will generate a consequence $\boldsymbol{x} \in \boldsymbol{X}$ (in terms of loss) through the determination of a state $\boldsymbol{s} \in \boldsymbol{S}$ (in terms of final value of the risk-adjusted performance of the fund). Given this, we characterise an act $\boldsymbol{f: S \rightarrow X}$ as a Savage act. By this, $\boldsymbol{F}$ is the set of all bounded Savage acts. The outcome $\boldsymbol{x}$ is thus determined by the function $\boldsymbol{f(s)}$, which is a real-valued function defined on a state space $\boldsymbol{S}$, where $\boldsymbol{s} \in \boldsymbol{S}$ is an unknown future state. As the future state is unknown, its related consequence / outcome is also of the kind.

The DM chooses the best available act based on disclosed information and his / her personal experience and subjective beliefs. This choice can be made with or without considering an information item in decision analysis. When a particular information item is considered, the DM's choice is conditioned upon it.

Y represents a new information item on the ESG risk (stranded assets risk exposure known by Exxon)[344]. The information item ***Y*** represents a particular event on which the decision of our investor will be constraint if he / she considers this ESG risk factor. In our example, this event corresponds to the assumption that *the risk-adjusted performance of the fund will be affected by the stranded assets risk (ESG risk)*.

Y is defined as a finite information partition on the state space ***S***. At a state ***s***, the DM knows only that the state belongs to the partition element ***y(s)*** belonging to ***Y*** that contains ***s***. ***Y*** is one of the feasible sets of states and is contingent on available information. This means that ***Y*** represents a set of potential risk-adjusted fund's performance values that the DM may expect when the information about the ESG risk is integrated in the decision analysis. Therefore, a particular information / event constraints the DM's choice (in the absence of any other constraint) to the subset of acts $\boldsymbol{F_y}$ that are measurable with respect to ***Y***. An act ***f*** belonging to $\boldsymbol{F_y}$ represents a decision constraint on the event ***Y*** (that is the information on the stranded assets risk).

However, even if the global value of the exposure is known, as we assume that our investor can define the fund's global exposure to the stranded assets risk, the final impact of this risk on the state of the fund's performance ($\boldsymbol{y(s) \in Y}$) is not known with certainty. Here, there does not seem to be an obvious probability assignment to state values in ***Y***, as there exist multiple probability distributions (multiple priors) on ***Y*** that generate a subjective uncertainty about what the *true* probability on ***Y*** is.[345] The event ***Y*** is

[344] As in Ro's model (1982), here, ***Y*** is assumed to provide decision-relevant information (no disinformation is considered).

[345] When the set P_B (B = all feasible acts) is a singleton, it is reduced to standard subjective expected utility (it must be complete). If it is not, it represents ambiguity about the *true* probability. *See* Al-Najjar N. I., De Castro L., *Subjective Probability*, Working Paper, 2010, 28 p., p 9.

ambiguous. This means that our investor cannot clearly predict the consequences of the ESG risk and estimate its effect on the fund's performance, instead, he / she subjectively assigns probabilities $\boldsymbol{\pi}$ to the event $\boldsymbol{Y}$ based on all available information and his / her professional experience.[346]

Facing the presence of ambiguity brought by $\boldsymbol{Y}$, we introduce $\boldsymbol{\mu}$ (a unique function) that represents subjective weights assigned by the DM based on his / her subjective beliefs and available information to every possible prior $\boldsymbol{\pi}$. In this context, $\boldsymbol{\mu}$ represents a "second order probability" over the first order probabilities $\boldsymbol{\pi}$. In other words, $\boldsymbol{\mu}$ corresponds to a subjective probability over the set $\boldsymbol{\Pi}$ of probability measures $\boldsymbol{\pi}$ that the DM thinks are relevant given his / her subjective information and beliefs. It measures the subjective relevance of a particular $\boldsymbol{\pi}$ as the "true" probability. In its turn, $\boldsymbol{\mu(Y)}$ is interpreted as the DM's subjective assessment of the likelihood of the event $\boldsymbol{Y}$. In this situation, the *DM's information is explicitly consistent with multiple probabilities on the state space relevant to the decision at hand* (Klibanoff et al. 2005).

According to the KMM model, $\boldsymbol{\mu}$ is a countably additive probability and is assumed to have a subjective expected utility (SEU) representation. Therefore, we define preferences over second order acts, which assign consequences to elements in $\boldsymbol{\Pi}$, as SEU preferences. On the other hand, preferences over first order acts are expected utility preferences. KMM is a two-stage model, meaning that the complete presentation of the DM's preferences over acts (that generate decision outcomes) in the presence of ambiguity is given by his / her utility function $\boldsymbol{u\,(f)}$ and the index $\boldsymbol{\varphi}$.

To account for this, we consider $\boldsymbol{\varphi}$ as a parameter that captures ambiguity attitude of the DM in relation to the second order preferences as well as $\boldsymbol{u}$ that determines risk attitude in relation to the first order acts. $\boldsymbol{u}$ is a von Neumann-Morgenstern utility function (it is real-valued, normalized, unique, continuous

[346] This situation of decision-making under uncertainty can be considered quite common in the area of investment management. We can say that generally, an investor is exposed to ambiguity in his / her decision-making. Inspite of available public data, he / she will face a range of possible return distributions in his / her decision-making.

An investor, in the best circumstances, with access to all publicly available data, will in general be left with a range of return distributions that are plausible (Klibanoff et al., 2005).

and strictly increasing) its shape characterises the DM's attitude towards risk. Here, we keep the assumption that a FD compliant investor is risk-averse (utility function is concave). In its turn, the shape of $\boldsymbol{\varphi}$ reflects the DM's attitude towards ambiguity (concave, linear and convex shapes corresponding to a-aversion, a-neutrality and a-seeking respectively). $\boldsymbol{\varphi}$ is real-valued, continuous, strictly increasing, unique up to positive affine transformations and twice continuously differentiable (this is a regularity assumption).

Before passing to materiality threshold definition under ambiguity, it is important to restate here, that in this model, the presence of ambiguity is due only to the ambiguous information in $\boldsymbol{Y}$. Otherwise, if the DM does not consider $\boldsymbol{Y}$ in his / her choice; we will face a decision-making problem under risk (or uncertainty).

There is a subjective uncertainty about what the *right* probability on S is: μ is the DM's subjective prior over Δ, the set of possible probabilities π over S, and therefore measures the subjective relevance of a particular π as the "right" probability. Ambiguity attitude is characterised by properties of φ. The model is based on assumption that a given individual will display the same ambiguity attitude across settings in which she might hold different subjective beliefs (as it is the case of risk attitudes in the classical theory). (Subjective belief that a particular π over all π's in Δ is the "right" one and it lies in E. E is the subset of the support Π (subset of Δ) of a real-valued function of subjective beliefs about probabilities μ).

Given this, we proceed to measuring of the materiality threshold of an information item representing an ESG risk of ambiguous nature.

Following the KMM, and assuming that our investor is risk-averse ($\boldsymbol{u}$ function is concave) but a-neutral ($\boldsymbol{\varphi}$ function is linear), we consider that the DM is an attribute (expected utility) maximiser[347] by choosing an optimal act offering the optimal associated outcome. This representation is possible in the

[347] This representation is possible in the SAM under assumption of a neutral attitude of a decision-maker towards the presence of ambiguity.

KMM under assumption of the neutral attitude of the decision-maker towards the presence of ambiguity.

Thus, the general functional representing the decision of the DM based on the information ***Y*** in this context is:

$$V(x^*/Y) = \int_{\Pi} \max \varphi \left(\int_s u\,(f(y(s)))\, d\pi \right) d\mu(Y)$$

Where

V(x*/Y) is the maximum subjective value from the DM's optimal act conditional upon the event (information) ***Y***

$f \in F_y$ is the payoff function of the DM' optimal act defined on the set ***Y*** matching a particular state with its corresponding consequence (outcome)

$y(s) \in Y$ is a future state constraint on the realisation of the event ***Y***

$\pi(\cdot)$ is a first order probability function conditional upon the event (information) ***Y***

φ is the preference function conditional on the presence of ambiguity in the decision problem generated by the event (information) ***Y***

$\mu(Y)$ is second order probability function conditional upon the event (information) ***Y***

Remember however that we assumed in this analysis a neutral attitude of our investor towards the presence of ambiguity. Under this assumption of ambiguity neutrality, *even if the measures in* ***Π*** *disagree on the probability of an event, the DM (decision-maker) behaves as if he assigns that event its μ-average probability. An ambiguity neutral DM, though informed of the multiplicity of π's, is indifferent to the spread in the ex-ante evaluation of an act caused by this multiplicity; the DM only cares about the evaluation* [348] using his / her subjective *expected prior*. That is why, even if the KMM preference model does not impose, in general, reduction between μ

[348] Klibanoff et al., Decision making under ambiguity, *Econometrica*, Vol. 73, No. 6, November 2005, p.1871

and π[349], this reduction occurs naturally in case of a-neutrality of the DM when the second order preference function φ is linear. In this case, the preferences of the DM facing ambiguity[350] are those of a SEU maximiser, and the presence of ambiguity does not affect his / her choice.

Therefore, given that the DM is smoothly ambiguity neutral, the representation of the preference functional can be reduced to:

$$V(x^*/y) = \int_s max\ u\ (f(y(s)))\ dP(Y)$$

Where

$V(x^*/Y)$ is the maximum subjective value from the DM's optimal act conditional upon the event (information) Y

$f \in F_y$ is the payoff function of the DM' optimal act defined on the set Y matching a particular state with its corresponding consequence (outcome). In other words, the DM's choice contingent on the information Y

$y(s) \in Y$ is a future state constraint on the realisation of the event Y

Y is a finite information partition on the state space S representing the subset of states potentially associated to the event Y (information about the risk)

$P(Y)$ is a subjective probability distribution (as in the SEU model) that our investor attributes to the realisation of the event Y. It is the DM's subjectively *expected prior*.

This means, that our investor being a SEU DM would be able to assign an exact probability value (for example 38%) to the event Y: *The performance of a fund could be affected by an ESG risk*. Remember that an event represents a

[349] According to the KMM model, the reduction is performed in the support of μ that is the subset of all possible probability distributions Π that the DM subjectively considers relevant. Due to conditioning on different information (for ex. When we consider y) the support Π of a DM's subjective belief varies (ambiguity (**belief**) varies, but not the **attitude** of a DM towards it).

[350] Recall that Lemma 4 and Remark 3 showed that under conditions likely to be assumed in any application (twice continuous differentiability of the function φ and Assumption 4), ambiguity neutrality is the *only* case where there will fail to be a range of strict ambiguity aversion (or love) and so is the only case where disagreement about an event's probability will not imply that the event is ambiguous. (*See* Klibanoff et al., 2005)

piece of information that a state (final risk-adjusted return) belongs to the partition ***Y*** when the state becomes known. Based on his / her subjective evaluation of the event's priors the DM can assign a concrete probability to an event and evaluate the potential final state and thus the value of the outcome (associated loss).

Under SEU, a DM reduces all uncertainties to risks (no ambiguity distinction) by evaluating them using the EU criterion with respect to his subjective probability measure. A DM has a subjective belief about the "true" probability distribution, but he lacks precise priors. Ambiguity neutrality coincides with the absence of perceived ambiguity since an ambiguity neutral decision maker has a subjective probability distribution over all events.

Now, suppose that the DM does not consider a new information item and his choice is not conditional on the realisation of an event Y. In this case, given the assumption that the ambiguity is generated by Y only and without considering Y the decision problem can be represented simply via the SEU preferences, the DM will choose an optimal act that yields the maximum subjective expected utility represented by the functional:

$$V(x^*) = \int_s max\ u\ (f(s))\ dP(s)$$

Where

V(x*) is the maximum subjective value from the DM's optimal act

$f \in F$ ***is*** the payoff function of the DM' optimal act defined on the total state space ***S***

P(s) is a subjective probability distribution not based on the information in ***Y***

$s \in S$ is a future state (not constraint on the realisation of any event)

Thus, following its general representation, the materiality threshold in the presence of ambiguity is defined by:

$$M(y) = V(x^*/Y) - V(x^*) \geq k,$$

$$M(y) \geq k$$

At this stage, for illustrative simplicity, we drop the consideration of the cost of information[351].

Generally speaking, the problem of ambiguity (probabilistic uncertainty) does not change the expected value, or more precisely the expected magnitude of "***k***"[352]. The materiality threshold defined under ambiguity in terms of its magnitude stays the same, as in case of an ambiguity-neutral DM, her choice is characterized by the SEU preferences.

[351] We can restate here the position proposed by Ro (1982): *Alternatively, one may interpret the outcome x* [produced by the act f (an act matches a final state with its corresponding outcome)] *as the « net » outcome reflecting the cost of information, assuming that the net payoff function has the same properties as those of the gross payoff function*.

[352] Remember that conceptually, "*k*" represents (as proposed by Ro (1982)) one unit of utility.

Résumé : La compatibilité de la gestion des risques environnementaux, sociaux et de gouvernance (ESG) avec les exigences des responsabilités fiduciaires des investisseurs (RF) en matière de gestion d`investissements est la question clé dans le contexte actuel de croissance rapide des stratégies d'investissement durable. Actuellement, les investisseurs n'ont pas de réponse claire à ce problème, ce qui les laisse parfois inertes face à ces nouveaux types de risques.

Nous explorons ici les récents développements dans la pratique juridique européenne et américaine afin de déterminer dans quelle mesure les RF exigent la prise en compte par les investisseurs des risques ESG dans leurs décisions d`investissement. Nous identifions la matérialité des risques ESG et l'efficacité des actions de gestion des risques comme les éléments fondamentaux pour la définition des obligations fiduciaires des investisseurs en matière de gestion des risques ESG. Nous élaborons une représentation théorique du concept de matérialité sous les contraintes des RF et identifions que dans le cadre juridique des RF les risques ESG sont assimilés aux risques financiers; leur gestion n'est donc requise que s'ils affectent financièrement les investissements. Nous démontrons également que les RF exigent la gestion des risques ESG long terme, s`ils sont suffisamment matériels compte tenu du taux d'actualisation appliqué, et formulons un principe d'actualisation conforme aux RF. Puis, à travers l'Etude de cas d`un récent litige aux Etats-Unis, nous établissons que l'aversion pour le risque dans la qualification de l'efficacité des actions de gestion des risques ESG pourrait entraver une gestion efficiente des risques en incitant les investisseurs à ne pas gérer un risque ESG matériel.

Descripteurs : Responsabilité fiduciaire, investisseurs institutionnels, fonds de retraite, risques environnementaux, sociaux et relatifs a la gouvernance (ESG), matérialité, prise de décision en incertitude, gestion des risques, aversion au risque, droit fiducie-gestion, responsabilité civile, incertitude préventive, prise de précaution optimale.

Abstract: The compatibility of Environmental, Social and Governance (ESG) risks management with the investment management requirements under the investors` fiduciary duties (FD) figures among the key questions in today`s context of a rapid growth of sustainable investment strategies. Today, investors have no clear answer to this issue, what leaves some of them inert in the face of these new and unconventional types of risk.

In our research, we explore the recent advancements in the EU and the US legal practice aiming to determine to what extent the FD requires ESG risks consideration by investors in their investment management decisions. We identify ESG risks *materiality* and the *effectiveness* of risk hedging actions as fundamental elements for the definition of ESG risks management obligations of investors under the FD rule. We design a theoretical representation of ESG risks materiality under the FD law and identify that within the FD legal framework ESG risks are assimilated to financial risks; thus, their management is required only if they are financially material for investments. We also reveal that the FD law requires management of long-term ESG risks, which are sufficiently material considering the applied discount rate, and formulate a FD-compliant discounting principle. Then, through the Case Study of the recent US ERISA ESOP lawsuit, we establish that risk-aversion in the qualification of the effectiveness of ESG risk hedging actions could impede efficient risk management by incentivising investors not to hedge a material ESG risk.

Keywords: Fiduciary duty, institutional investors, pension funds, sustainability, ESG risk factors, materiality, decision-making under uncertainty, risk management, risk-neutrality, risk-aversion, trust fiduciary law, tort liability of negligence, precautionary uncertainty, optimal precaution.