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Pension Funds and Sustainable Investment

Comparing Regulation in the Netherlands, Denmark, and Germany

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Comparing Regulation in the Netherlands, Denmark, and Germany[1]

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1. Introduction

The rapid growth in funded pension schemes in the past several decades is an important feature of advanced capitalism. In 2017, pension assets in the OECD were more than USD 40 trillion (OECD 2018), up from USD 24.6 trillion in 2006 (OECD 2007, p.3). The globalization and deregulation of financial markets since the 1970s have contributed to the growth in funded pension products, as many governments have sought to expand funded pension provision to compensate for cuts in public pensions and to increase the pool of capital available for investment. Innovations in portfolio management have strengthened this trend by expanding the range of investment products available to institutional investors.

Institutional investors like funded pension schemes typically allocate assets in order to achieve the highest possible return on investment at acceptable levels of risk. A striking feature of financial markets today, however, is that sustainable investment criteria (hereafter: SI) are increasingly influencing portfolio management among institutional investors in the affluent democracies. In this paper, we follow the European Sustainable Investment Forum (2018: 12), when defining sustainable investment: "Sustainable and responsible investment ("SRI") is a long-term oriented investment approach which integrates ESG factors in the research, analysis and selection process of securities within an investment portfolio." ESG refers to environmental, social and governance factors. Hence, sustainable investments are those investments that aim to achieve positive outcomes for the environment, for society and for the corporate governance of corporations. Moreover, sustainable investments are not aimed at realizing short-term profits, but rather at realizing long-term returns.

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Despite recent growth, the European market for sustainable investment by *all investors* – estimated by EUROSIF (2018: 83) at €23.493 billion assets under management - is still relatively small compared to the total amount of (pension) assets under management in Europe. Moreover, there is considerable cross-national variation in the extent to which institutional investors incorporate ESG criteria. Scholars in business studies and other disciplines have proposed various explanations for why SI is not more widely adopted. First, investors may be driven by the idea that SI leads to lower returns and higher risks due to the integration of non-financial considerations in investment decisions, although the empirical evidence is inconclusive. Second, investors' temporal orientation – aimed at long-term returns or short-term profit maximization – is argued to shape SI preferences. Investors with an orientation towards the long-term may be more inclined to adopt SI than short-termist investors. Such preferences are, in turn, found to be correlated with reputational concerns, stakeholder demands and cultural norms.

By contrast, our focus in this paper is regulatory constraints or incentives for SI by capital-funded pension schemes. The importance of regulation for constraining or incentivizing actors' market behaviour is not only well-documented in the scholarship on the regulatory state (cf. Majone 1997; Levi-Faur 2014), but also follows from existing research on sustainable investment by pension funds and other institutional investors (cf. Bengtsson 2008; Sievänen et al. 2013). These studies find considerable national differences across political economies and identified regulation as a key influence. In this paper, we employ a broad conceptualization of regulation, incorporating 1) *national legislation*, 2) *regulatory activities* by supervisory agencies and 3) *self-regulation* by the pension sector itself. Self-regulation, also known as civil regulation, refers to "private, non-state, or market-based regulatory frameworks to govern multinational firms and global supply networks" (Vogel 2008: 69). We subdivide the last category into self-regulation at the sector-level, for instance by a professional association, on the one hand, and self-regulation at the level of the scheme itself, for instance by member representation within a pension fund, on the other hand.

The goal of this paper is to investigate the institutional preconditions that influence the extent to which national regulatory regimes support sustainable investment strategies by capital-funded occupational pension schemes. We explore the effects of two explanatory variables: 1) *the level of capitalization* in the second pillar and 2) *the legal basis* of the second pillar (the trust model v. the insurance model). We expect that national regulatory regimes will be more accommodating of sustainable investment in countries with high levels of occupational pension capitalization, as well as in countries that rely on the trust model. SI regulation is less accommodating in countries with low levels of capitalization and the use of the insurance model.

We employ a "diverse cases strategy" (Gerring 2007: 97-99) to analyze variation in SI regulation for capital-funded pension schemes in three political economies: the Netherlands, Denmark and Germany. The Netherlands and Denmark are both cases of pension systems with a highly capitalized second pillar (184.2% and 208.4% of GDP in 2017, respectively), while the German second pillar has a low level of capitalization (8.2% of GDP). Meanwhile, the trust model dominates in the Dutch pension system, while Denmark has an insurance-based model of occupational pension provision. In Germany, occupational pension vehicles like *Pensionsfonds* and *Pensionskassen* are typically classified as pension funds (although often linked to insurance companies), while *Direktversicherung* by employers is insurance-based. In this case, both models therefore co-exist.

Our findings largely confirm our empirical expectations. Across our three cases, we find considerable variation in the mix of regulatory incentives that we identify as supportive of SI: the Netherlands is a case of active regulatory encouragement of SI, Denmark is a case of modest regulatory incentives for SI, and Germany is home to a regulatory regime that does little to support SI. Both the role of the regulator and of the sector itself inform the major differences between the three systems: in none of the three cases is there legislation that explicitly mandates or prohibits SI. In contrast to Denmark and Germany, the Dutch regulator acts as an important norm entrepreneur, monitoring pension funds' SI and developing new risk assessment tools to further facilitate the spread of these practices. In Denmark, governments use non-binding instruments (guidelines) and mandatory disclosure of ESG in annual reports to try to influence ESG policy. The Danish pension sector actively promotes SI, but self-regulation through codes of conduct – as in the Netherlands – is largely absent. In Germany, meanwhile, SI is promoted individually at pension scheme level. In short, the degree of capitalization and legal basis of the second pillar seem to matter for the adoption of regulation that is accommodative of SI.

The outline of the paper is as follows. The first section discusses the scholarly literature on the incorporation of ESG criteria in pension fund investments. It will not only incorporate the more established scholarship on social investment from economics, business and management studies, but also review the emergent scholarship from political science, in particular comparative political economy and financialization studies. The second section outlines our methodology and data collection strategy. The subsequent section reviews the structure of pension systems in the Netherlands, Germany and Denmark and details statutory regulation and self-regulation for each of the three cases (if any) in the area of pension investment. Where appropriate, the paper makes a distinction between pension providers: company funds, industry funds and life insurance companies. The final section links the research findings from the earlier sections to the relationship between the market economy, industrial relations and pension funds´ SI. The paper will conclude by formulating expectations for future research on how national institutions shape SI regulation by pension funds.

2. Literature Review

The literature on SI is relatively small and is dominated by business administration research concerning the effectiveness (i.e. rate of return) of SI relative to “egoistic” (profit-maximizing) investment strategies. This section briefly reviews this literature, arguing that there is no scholarly consensus that SI yields substantially lower returns than more "egoistic" strategies. We then discuss the comparative political economy (CPE) literature relevant to our central research question: what drives SI? Although there is virtually no CPE on this topic, we can use key contributions to literature on Varieties of Capitalism (VoC) and financialization studies to underpin our claims about how regulation shapes SI by pension schemes. The theoretical insights gained from this section will be used to formulate empirical expectations for each of our cases.

2.1 Business Administration Studies

Previous business administration studies ask whether sustainable investments by pension schemes result in lower returns and higher risks (especially climate-related risks for environmental investments) due to the integration of non-financial considerations in investment decisions. Some studies report positive (e.g. Kempf and Osthoff, 2007; Charlo et al., 2015; Martínez-Ferrero and Frías-Aceituno, 2015), some negative (Fowler and Hope, 2007; De Haan et al., 2012) and some no effects at all (e.g. Galema et al., 2008; Renneboog et al., 2011). This heterogeneity in findings is echoed by a meta-analysis covering about 2200 individual studies that have been published since the 1970s: Friede et al. (2015) observe a large majority of studies reporting a positive relationship between ESG criteria and corporate financial performance. Markets in North America and emerging countries show a higher share of positive results compared with Europe. Furthermore, the positive relationship is stable over time and across asset classes, except portfolio-related studies. The correlation and share of positive findings is lower for SI portfolios, because market and non-market factors overlap and a mixture of negative and positive SI-screened funds as well as management fees could distort the effect. Finally, there is no substantial and meaningful difference between corporate financial performance and single E, S, and G criteria.

More recently, Sievänen et al. 2017 – based on a survey of about 250 pension funds in Europe – conclude that there is a positive relationship between general management strategies that emphasise the long-term and include SI investments. In contrast, pension funds that only have a financial focus (egoistic values) do not show higher levels of responsible investments. Therefore, self-regulation of pension schemes seems to matter for SI. However, we often lack knowledge about the conditions under which SI factors are taken into account and who decides about it. The motives for considering SI criteria can be "doing good for its own sake" (meaning to be convinced of certain values and trying to influence others), implementing stakeholder demands (i.e. current and future retirees, plan sponsors), reputation and complying with statutory regulations (Sievänen et al. 2017). The analysis of the latter, in particular, can be a first step in assessing whether existing rules promote and stipulate or rather prevent ESG investments.

Based on interviews with researchers and analysts of rating agencies assessing ESG investment decisions, Parfitt (2018) found for pension funds mainly in Australia (and to lower degrees in Europe and North America) that the consideration of ESG criteria is not a decision made by fund members, but rather primarily by investment managers, based on advice of ESG analysts and supervised by the pension fund's board of trustees. Therefore, SI is the result of perceptions of public opinion by a small group of investment professionals, rather than of an objective and neutral risk calculation. However, this may vary by country or pension fund.

Other researchers have asked whether there is demand from pension fund members for SI, and whether there is a difference between members' and managers' preferences concerning SI. Apostolakis et al (2016) conducted focus groups with members and manager of one pension fund (PFZW) in the Netherlands and found that pension fund members are more in favour of freedom of choice and SI than pension fund managers are. The implication here is that when pension scheme members have the opportunity to influence investment decisions, this may boost SI as well as the legitimacy of investment decisions.

Yan et al (2018) analyse the relationship between the financial and social logic behind investment decisions of institutional investors in 19 countries using qualitative as well as quantitative methods. The researchers conclude that the relationship between financial and social logic shifts from complementary to competing the more prevalent a profit-maximising culture is in a country. The authors also found country-specific institutional factors that mediate the relationship between financial and social goals. Testing for a population's religiosity, strong green parties, and trade union density, only the latter increase ESG investments, but only if the prevalence of the financial logic is not dominant. Above a certain threshold, the complementarity turns into a strong polarisation.

Sievänen et al (2013) analyse the drivers of pension scheme SI on the basis of a survey of about 250 pension funds in 15 European countries, finding that national legal tradition, pension scheme ownership and pension scheme size (curvilinear relationship) drive SI. In detail, ESG criteria are more common in pension schemes in English-origin and Scandinavian-origin pension schemes compared with German-origin ones. In line with Bengtsson (2008) and Sandberg et al. (2009) – and Gjølberg (2009), Gond et al. (2011) and Matten and Moon (2008) for corporate social responsibility –, this result hints at the legal and regulatory environment that affects pension schemes' ESG investments.

2.2 Comparative Political Economy

The role of SI in occupational pension investment strategy has received little scholarly attention in the field of comparative political economy (CPE). This neglect is in part due to the strong focus on the dichotomy between bank-based and stock market-based finance, on which dominant theories in CPE rest. Central to the CPE literature is the emphasis on the complementarities of national systems of social protection, industrial relations, skill formation, and corporate finance, which result in at least two so-called Varieties of Capitalism (Hall & Soskice 2001; Deeg 2007): liberal market economies (LMEs) and coordinated market economies (CMEs). LMEs are characterized by uncoordinated wage bargaining, minimal state welfare provision, training institutions that emphasise the acquisition of general skills, and stock market-based corporate finance. In short, markets are used to regulate key elements of the political economy (Hall and Soskice 2001). In contrast, CMEs are marked by comprehensive state-organized social protection that insures specific skill investments, highly institutionalized collective bargaining, training institutions that stress specific skill acquisition and bank-based firm financing (ibid.; see also Ebbinghaus and Manow 2001). If discussed at all, capital-funded pension schemes would therefore be more likely to be associated with LME's rather than CME's.

An exception to CPE's relative indifference towards capital-funded pension schemes is the scholarship on patient capital. To many scholars in the VoC tradition, one of the distinguishing features that sets CMEs apart from LMEs is the presence of large concentrations of so-called patient capital. Patient capital refers to the provision of long-term capital for investment, often with the aim of supporting new enterprises or to achieve other non-financial goals (e.g. job creation) (Deeg, Hardie and Maxfield 2016). In CMEs, patient capital provision is supported by several institutional features, most notably the block-holding and mutual share-ownership of corporations and trade unions (ibid.; Nazcyk 2016). While VoC scholars traditionally pinpoint universal banks as the providers of patient capital, recent scholarship has begun to interrogate a similar role played by pension funds (Van der Zwan 2017). Pension funds, due to their long-term liabilities, are assumed to pursue an equally long-term investment horizon. For this reason, pension funds are said to be less short-termist in their investment practices than other types of investors. Evidence of the supposed patience of pension funds as investors is limited, however, not least because there is little reliable data on asset holding periods by pension funds (McCarthy et al. 2016).

The role of the state is essential in facilitating this type of coordination. In the area of pension investment, for instance the state provides regulation such as tax incentives, solvency requirements and fiduciary obligations. Such regulation serves multiple purposes. First, employees receive reliable pensions, while employers obtain a level playing field (all workers in the same sector participate in the same pension scheme) and predictable non-wage labour costs. Second, state regulation may aim to mobilize patient capital for long-term investment in the political economy. Estevez-Abe (2001) calls this the "forgotten link' between financial regulation and the welfare state: the investments by welfare funds can generate positive effects on economic development, if channelled into the right direction by state regulation. It should be emphasized that the state is not a selfless actor: research shows how in several advanced political economies, governments have stimulated the creation of capital-funded pension schemes to support their own austerity-oriented political agendas (Trampusch 2018).

Finally, CPE points at a last potential driver of SI: pension schemes' membership. Funded pension schemes in the CMEs are collectively governed: representatives from employers and unions jointly administer pension schemes, so both actors can influence investment strategy. Pension schemes typically delegate this to professional money managers, but pension scheme boards can typically influence the investment portfolio if they wish. Here, the crucial issue is how the members are represented on the pension scheme boards and how much leeway their representatives have to push for specific investment strategies (Vitols 2011; Wiß 2015). The existence of strong trade unions and fund-level discretion might be a mechanism that explains more SI self-regulation in countries with trust-based pension funds in comparison to insurance-based pensions: trade unions on pension fund boards might push for more long-term and socially-oriented investments, similar to the finding that their presence results in higher fixed-income securities that are less risky than equity investments in times of financial market downturns (Wiß 2015; Anderson 2019).

3. Methodology

The study employs a "diverse cases strategy" (Gerring 2007: 97-99) to analyze variation in SI regulation for capital-funded pension schemes in three political economies: the Netherlands, Denmark, and Germany. The diverse case strategy maximizes variation on relevant independent variables to demonstrate the hypothesized relationships. In this study, we are interested in how the legal basis of capital-funded pension provision interacts with the level of capitalized pension provision in shaping the formulation of SI regulation, so we selected cases that represent the most important combinations of these two variables in corporatist countries. Our analytical model generates four combinations:

1. Low capitalized pension provision in the context of insurance-dominated pension markets;
2. Low capitalized pension provision in the context of trust-dominated pension markets;
3. High capitalized pension provision in the context of insurance-dominated pension markets;
4. High capitalized pension provision in the context of trust-dominated pension markets.

The strict capital requirements of the insurance model compared to the trust model are hypothesized to slow the adoption of regulation that encourages SI, while greater levels of capital-funded pension provision are hypothesized to encourage the adoption of regulation that accommodates SI. Our reasoning is that where capital-funding is well-established, more opportunities exist to experiment with relatively new types of investment vehicles. In addition, the pension scheme managers and investment consultants are more likely to have experience participating in the kinds of regional and international forums where SI is discussed and promoted. We also expect there to be more accommodating regulation of social investments for pension funds than for insurance companies. Because capital requirements for trust-based pension funds are lower than they are for insurance products, plan managers have more leeway to pursue SI.

Table 1 below shows our case selection strategy at work. The variable ‘capitalization of occupational pension provision’ is operationalized as either high or low and the variable ‘legal form of capital-funded pension provision’ is operationalized as either trust or insurance. The combination ‘insurance model' and ‘low level of capitalization' (represented by Germany) is predicted to lead to slow and uneven SI-friendly regulation. Due to the rather diverse occupational pension landscape in Germany, we would expect moderately accommodating SI regulation for the trust-based *Pensionsfonds* and *Pensionskassen* The combination ‘insurance model' and ‘high level of capitalization' (represented by Denmark) is expected to lead to moderately accommodating SI regulation. The combination of ‘trust model’ and ‘high capitalization’ (represented by the Netherlands) is expected to lead to strongly accommodating SI regulation. All three countries have corporatist industrial relations and are EU members, so corporatism and the influence of EU law are held constant across the cases.

Table 1: Case selection by independent variables

		Legal basis for capital-funded pensions	
Capitalization of occupational pension provision		Trust	Insurance
	Low	Germany (*Pensionsfonds*, *Pensionskassen*)	Germany (*Direktversicherung*)
	High	Netherlands	Denmark

In this paper, we employ a broad conceptualization of regulation, incorporating 1) *national legislation*, 2) *regulatory activities* by supervisory agencies and 3) *self-regulation*. Self-regulation, also known as civil regulation, refers to “private, non-state, or market-based regulatory frameworks to govern multinational firms and global supply networks” (Vogel 2008: 69). This last category we subdivide into self-regulation at the sector-level, for instance by a professional association, on the one hand and self-regulation at the level of the scheme itself, for instance by member representation within a pension fund, on the other hand. In our operationalization, regulation can either be ‘*accommodating’* or ‘*restrictive’*. Accommodating regulation will be aimed at incentivizing SI, while restrictive regulation aims to restrict SI. Either type of regulation may take the form of *a legal requirement* (e.g. a prohibition of certain types of investments) or *soft law provisions* (e.g. investment policies, codes of conduct). They may also occur in the shape of *incentives*, whether financial or material (e.g. tax incentives, transparency rules, financial metrics) or normative in nature (e.g. recommendations, knowledge creation).

The next sections introduce the three pension systems and investigate the extent to which SI principles have been incorporated in regulation.

4. The Netherlands, Denmark and Germany Compared

4.1 The Netherlands

Overview of the Pension System

The Netherlands has a mature, three-pillar pension system (for a detailed analysis, see Anderson 2011), with historical roots dating to the 19th century. The first pillar consists of the flat-rate, statutory pension for all Dutch residents, the AOW (*Algemene Ouderdomswet*). While the AOW is financed on a PAYGO basis, occupational pensions are capital-funded. The second pillar is large, particularly in comparative perspective: in 2016, its pension fund capitalization relative to GDP was the highest of all OECD countries: 180.3 % (OECD 2018). Occupational pensions are typically defined benefit (DB) schemes, that typically pay 70% of the average salary (including the AOW) after 40 years of employment. The third pillar of private insurance products is comparatively small in the Netherlands (6%), due to the importance of the first (54%) and second pillars (40%).

The Dutch second pillar has an exceptionally high participation rate - around 96% of the dependent workforce (Engelen, Dill-Fokkema and Joosten 2016) - thanks to the quasi-mandatory status of occupational pension schemes. Collectively bargained pension schemes may be subject to a mandatory extension to an entire sector or industry, provided the employers association and labour union party to the agreement meet certain representational criteria. Where a mandatory extension applies, the management of the pension scheme becomes the responsibility of an industry-wide pension fund, that holds a monopoly on occupational pension provision in the industry or sector. For this reason, Dutch pension funds hold a much larger share of the market for occupational pension funds than private insurance companies.

The Dutch social partners – employer associations and labour unions – are jointly responsible for the governance of the second pillar. First, they bargain collectively over the contents of occupational pension plans. Second, they are jointly represented on the boards of trustees of occupational pension funds. As members of the board, the social partners set the formal investment policy of the fund, make decisions on contribution levels and indexation, and select asset management companies. Finally, the Dutch social partners are represented on the Socio-Economic Council [*Sociaal Economische Raad*], which is the most important interlocutor of the Dutch state in the area of social-economic policy-making. The state therefore tends to take a secondary role in the Dutch pension system, although scholars have noted stronger state intervention in recent years (Keune 2016). Other important players include the Pension Federation (*Pensioenfederatie*), the interest organization of Dutch pension funds, and Eumedion, an interest organization for Dutch and non-Dutch institutional investors, specifically in the areas of corporate governance and sustainable investment.

Legislation

The most important legal requirement concerning investment is that pension funds allocate their assets in accordance the Prudent Person Rule (PPR). The PPR is part of the EU Directive on Institutions for Occupational Retirement Provision. In Dutch legislation, the PPR is incorporated into the 2008 Pension Act *(Pensioenwet,* PW*)* and the 2015 New Financial Framework. The PPR is an open legal norm that requires investments be made in the sole interest of the beneficiaries. Under the PPR, no asset categories are prohibited.[2] However, investments in the sponsoring corporation are restricted to 5% of the portfolio (PW, art. 135.1 sub b) and pension fund assets must to be appraised at market value (PW, art. 135.1 sub c). In addition to the PPR, pension funds are required by law to outline their investment policy in a formal document, as defined by the pension fund board (PW, art. 135.2). Investments in government bonds are exempt from these rules (Art. 135, lid 3). Finally, the law states that the operational integrity and internal control ("*integere en beheerste bedrijfsvoering*") of a pension fund should be such that the fund can adequately manage financial and non-financial risks and ensure its long-term financial viability (PW, art. 143.2 sub c and d).

The New Financial Assessment Framework (*Nieuw Financieel Toetsingskader*, Wet nFtk) for pension funds includes additional rules regarding funds' risk management. Under the nFTK, a fund's investment policy should be in line with the degree of risk acceptance voiced by those representing the beneficiaries of the fund and the characteristics of the fund (nFTK,

[2] The Pension Act does prohibit pension funds from providing direct loans with a duration of one year or longer (PW, art. 136).

art. 1.1). Pension funds should formulate a long-term strategic investment policy that describes investment goals, the composition of a desired portfolio, and the extent to which deviations from this model are allowed (nFTK, art. 13a.2). The strategic investment policy is then translated into an investment plan, in which the fund provides guidelines for its investments in particular asset categories (nFTK, art. 13a.3) and outlines procedures for periodic evaluation of its investment strategy and plan (nFTK, art. 13a.5). Further requirements on the internal control of the fund are provided, including a balance between the complexity of the investment portfolio and the available knowledge of fund managers (nFTK, art. 18.3).

There are very few legal requirements regarding sustainable investment; indeed, mandating a particular investment policy is not in line with the Dutch state's historically hands-off approach to pension funds' asset management. There are two important exceptions, however. First, the Pension Act requires pension funds to state in their annual reports how they incorporate ESG-criteria in their investment policy (Art. 135, subsection 4). Second, Article 21a of the Market Abuse Decree of the Financial Supervision Act prohibits Dutch financial institutions (including pension funds) to invest in firms contributing to the production of cluster munition. This legal ban was incorporated into Dutch law in 2013, after the Netherlands became a party to the Convention on Cluster Munitions. The decree is enforced by the Financial Markets Authority (*Autoriteit Financiële Markten*, AFM), that maintains a list of prohibited firms. Non-compliance by Dutch financial institutions may result in a €500.000-1.000.000 fine.

Regulatory activities by supervisory authority

Like the government, the supervisory authority (*De Nederlandsche Bank*, DNB) advocates a hands-off approach concerning pension fund investments, including sustainable investments. The position of the Dutch Central Bank is that pension funds should decide themselves how they will formulate sustainable investment practices, as long as these practices are line with the prudent person rule (DNB 2016: 5). DNB's regulatory activity is therefore aimed at monitoring whether a fund's sustainable investment practices is a) in accordance with the PPR and b) in accordance with the requirements of operational integrity and internal control.

Nonetheless, over the past few years, DNB advocated for more sustainable investment practices among Dutch pension funds. Instead of using its regulatory authority, however, DNB has made its preferences known predominantly in public communications and private communications with Dutch pension funds. Overall, DNB (2018) believes that sustainability is "not a reason to make fundamental concessions to risk- and return characteristics," although it does see a connection between sustainability and financial risk. Since 2015, for instance, DNB (2017) has considered climate change an investment risk and it is in the process of developing a “climate stress test” for pension fund investments. Adequately assessing the risk of sustainable investment is difficult, however, and requires substantial research. DNB (2018) therefore encourages pension funds to “learn by doing.”

DNB has also been active in monitoring the incorporation of ESG principles in pension fund investment policy, identifying five categories of ESG activity (ibid.). Category 1 funds do not report on ESG investments in their annual reports. Category 2 funds do not have an SI policy in writing, do not apply it consistently, or only have a very limited exclusions policy (around 12% and 31% of pension funds belong to these two categories respectively). Category 3 includes funds with a more or less formalized ESG policy, apply principles of ESG investment, have an exclusion policy and undertake shareholder engagement, vote their proxies at shareholder meetings, and select best-in-class investments (26% of funds). Category 4 funds have a more extensive ESG policy (20%), while category 5 includes funds with an integrated SI policy (11%).

Based on its own assessment, DNB has made several recommendations. First, DNB encourages pension funds to increase their collaborations on sustainable investments within the sector. Second and third, DNB hopes for more transparency on sustainable investment, as well as further integration of sustainability in the risk management of the investment portfolio. Fourth, DNB calls on Dutch pension funds to ensure an increase in the availability, quality and standardization of ESG-information and more straightforward reporting on sustainability. Finally, DNB (2016: 5) recommends more scientific research into the influence of ESG factors on investment policy.

Self-regulation

Three examples of self-regulation are particularly important in terms of ESG investment. First, the Pension Funds Code (*Code Pensioenfondsen*), formulated by the Pension Federation and the Labour Foundation (2014), includes provisions relevant to ESG. Principle 27 states: “The board of trustees will lay down its considerations concerning sustainable investments and ensure these are available to all stakeholders. In this regard, the board will also take account of good corporate governance” (ibid.). Principle 28 continues: “In determining its policy, the board of trustees will take account of the fund’s liabilities. In addition, account must also be taken of its responsibilities vis-à-vis stakeholders to ensure an optimal return at an acceptable level of risk” (ibid.). The last principle on sustainable investment states: “The board of trustees must ensure that the stakeholders support the choices being made regarding sustainable investment" (ibid.). Compliance is monitored on the basis of the "apply or explain" principle: pension funds should comply with the Code or otherwise motivate the decision to deviate in their annual reports (ibid.).

Second, Eumedion has formulated a "Dutch Stewardship Code" (2018), based on the Dutch Corporate Governance Code and the EU Shareholder Rights Directive. In the Stewardship Code, Eumedion defines best practices of engaged share ownership, which only pertain to a particular segment of SI practices, namely shareholder engagement. Concretely, this means that investors monitor the boards of directors of the listed companies in which they invest, cast informed votes at annual general meetings, and engage with these companies on a variety of governance-related issues, including ESG impact. From 2019 onwards, institutional investors have a reporting duty on their compliance with these best practices, following the "apply or explain" principle. The Stewardship Code also promotes a long-term investment horizon and investors are encouraged to incorporate non-financial criteria into their risk assessments (e.g. climate change risks, social and governance information) (ibid.).

Third, the 2018 Code International Socially Responsible Investment Pension Funds was signed by 73 pension funds, three Ministries (Finance; Foreign Trade and Development; Social Affairs and Employment), three labor unions and six NGOs. The Code formalizes the parties' commitment to international agreements, such as the OECD Directive on MNCs, the UN Guiding Principles on Business and Human Rights and the Sustainable Development Goals. While taking pension funds' own discretion on whether or not to adopt SI as the point of departure, the signatories agree to the joint development of SI instruments in the areas of policy formulation, delegation, monitoring and transparency. As part of the so-called Deep Trajectory, the signatories will also develop cases studies from concrete issues emerging from funds' investment practices. In both tasks, innovation through learning is identified as the main mechanism through which the Code will stimulate the spread of SI (Sociaal-Economische Raad 2018).

Pension funds themselves have also taken steps to foster sustainable investment. The annual survey of the Dutch Association of Investors for Sustainable Development (VBDO 2018) reveals that all of the 50 largest Dutch pension funds incorporate ESG principles in their investment policy statements, although only two-thirds discuss how these principles should be implemented. Like the DNB study, the VBDO survey reveals that adoption of ESG has been uneven within the Dutch pension sector. While 34 Dutch pension funds are signatories to the United Nations Principles of Responsible Investment, for instance, only seven of the 50 largest pension funds achieve an above-average rating for ESG in the VBDO survey against 32 below-average scores, including six funds without any ESG implementation (ibid.).

4.2 Denmark

Overview of the Pension System

Denmark also has a multi-pillar system with a large, capital-funded second pillar with corporatist governance. The Danish pension system consists of several layers: 1) a statutory, tax-financed, universal basic pension (*folkepension*) with means-tested supplements; 2) a statutory employment-related top-up (ATP; *Arbejdsmarkedets Tillægspension*; Danish Labour Market Supplementary Pension); 3) collectively negotiated earnings occupational pensions covering more than 90% of employees (labour market pensions/*arbejdsmarkedpensioner*); and 4) individual, private pension savings. The Danish pension sector has one of the highest levels of financial assets in the OECD (more than 160% of GDP at the end of 2015; see Finanstilsyn 2017, p. 3)

Like the Netherlands, collective, capital-funded pension schemes administered by employers and unions cover about 90% of the labour force. Labour market pensions (*arbejdsmarkedpensioner*) have been mandatory components of collective agreements since 1991 (Due and Madsen 2003). Employers typically pay 2/3 of contributions and employees 1/3, ranging from approximately 10 to 17 percent of wages. Like the Netherlands, capital-funded occupational pensions are an important supplement to the public flat-rate pension.

The majority of labour market pensions are DC schemes organized as insurance products, with some company schemes constructed as pension funds. Both types of pension schemes are structured as life insurance and are thus subject to EU life insurance legislation (Solvency II) and Danish law. Life insurance regulation (within the constraints of Solvency II) applies to all capital-funded pension schemes, even those set up as pension funds. This means that capital requirements are higher than in trust-based systems like the Netherlands (and the UK). Compared to the Netherlands, Danish schemes are also somewhat "younger" because many were not established in many sectors until the 1990s, so they will not reached full maturity until about 2040.

All types of occupational pension schemes are governed by an administrative board with parity representation of employees and employers. Most schemes are defined contribution (DC), and the most common form of pension product is the traditional life insurance annuity with either a guaranteed interest rate or a market interest rate. The latter is becoming much more common. A typical manual worker with 40 years of contributions will receive about 90% of previous net income (including the basic pension and the other public scheme, ATP), when the labor market pension schemes are fully mature, starting in about 2020 (ØEM 2005: 11). The combined first and second pillar replacement rate is much higher for low-income employees because the basic pension plays a larger role. Between 2000 and 2050, the share of the labor market pension scheme in a typical manual worker's retirement income package will rise from less than 5% to more than 35% (ØEM 2005: 17). Until recently, most schemes offered pension products with a guaranteed rate of return and "bonus potential," but the low interest rates of the past decade have prompted a switch to unit-linked products with variable annual increases.

National legislation

As noted, Danish pension schemes are regulated as insurance products, so they are covered by the Danish Law on Financial Activities (*lov om finansiel virksomhed*), which is based on Solvency II (previous iterations of the law were also based on EU insurance directives). The Danish Financial Supervisory Authority (DFSA; *Finanstilsynet*) supervises the activities of financial service providers, including pension schemes.

The goal of the Financial Business Act (as it relates to pensions) is to safeguard the interests of pension plan participants. Before 2016, the law included restrictions on investments (i.e. asset classes) in order to limit the pension fund sector's exposure to risk (articles 158-169 in the old law).[3] The Financial Business Act was updated in 2016 to comply with Solvency II. All quantitative investment restrictions were abolished (Solvency did not permit any), but Article 158 of the Act still requires pension funds to manage pension contributions in an appropriate manner so that customers' expectations are met. In line with Solvency II, the Financial Business Act (supervised by the DFSA) now requires pension schemes to follow the Prudent Person Principle. The shift to Solvency II has not led to major adjustments in portfolio management, because the DFSA had already introduced requirements for pension schemes to use market valuation of assets and liabilities and risk-based valuation of solvency.

Prior to the incorporation of Solvency II into Danish law, government ministers and the DFSA interpreted the Law on Financial Activities's fiduciary requirements fairly strictly: ESG

[3] Investments in equities were limited to 70% of assets under management, and there were restrictions on the geographical concentration currency denomination of assets (see Rasmussen, Kahlke, Hansem, Seiersen and Schaarup 2009, p. 32).

investments were not permitted unless they generated the highest possible return on investment. In other words, ESG investments were legal, as long as pension schemes' met their fiduciary duty to pursue the highest possible returns. According to one legal analysis, the introduction of the Prudent Person Principle as part of Solvency II does not change this (Horvathova et al. 2017). In practice, however, this provision is hard to enforce because of the difficulty of demonstrating that an investor (i.e. a pension plan participant) suffered financial injury because of a particular ESG investment.

Since ESG is most developed for equities (compared to other investments), Solvency II's fairly strict capital requirements might dampen enthusiasm for ESG investing (i.e. if investors switch from equities to bonds; see OECD 2017a, p. 19). Like the Netherlands, Danish legislation concerning ESG does not mandate specific ESG-based investment policies, focusing instead on agenda-setting and disclosure. These measures were responses to pension schemes' growing activities in the field of responsible investment and mounting pressure from the pensions sector and NGOs to reconcile pension schemes' investment policies with Danish commitments under international law, such as the UN PRI initiative (see below).

The Danish government has actively tried to shape institutional investors' approach to ESG and corporate social responsibility (CSR) by using non-binding instruments. In 2008, the government issued an Action Plan for Corporate Social Responsibility (*Handlingsplan for virksomhedernes samfundsansvar*). The Action Plan encourages enterprises to incorporate international benchmarks (like the UN Global Compact) concerning ESG (as part of the larger category of corporate social responsibility) into their business strategies.[4]

The Action Plan was the basis for changes to national law concerning financial disclosure (årsregnskabsloven § 99 a; in force since 1 January 2009) to require large enterprises (including pension schemes) to disclose ESG investments, and this is under consideration for small pension schemes (OECD 2017a, p. 15; MSCI 2016, p. 29). Companies must also report how ESG criteria relate to company strategy and performance (OECD 2017a, p. 17). The Action Plan was also the basis for research into how ESG could be reconciled with institutional investors' fiduciary duties (Stewart 2008b). In March 2018, the government built on these initiatives to formulate a set of guidelines for responsible investment (*Vejledning om ansvarlige investeringer*). The guidelines are based on the principles developed by the OECD on responsible business conduct, and the UN.[5]

[4]https://samfundsansvar.dk/sites/default/files/media/handlingsplan_virksomheders_samfundsansvar_september_2008.pdf. Accessed 5 May 2019.
[5] https://samfundsansvar.dk/sites/default/files/vejledning-ansvarlige-investering_erhvervsstyrelsen2018.pdf.

Regulatory activities by the supervisory authority

There is no national legislation concerning ESG investments, but the DFSA stated explicitly in 2007 that ESG investments do not conflict with pension schemes' fiduciary obligation to try to achieve the highest possible returns for pension plan beneficiaries. The DFSA based its decision on an analysis by the Pension Market Council, a body appointed by the government to provide discussion and research on the future development of the pension system (Pensionsmarkedsrådet 2007).[6] At the time, many pension schemes had started to incorporate ESG considerations into their investment strategies, spurred partly by international initiatives such as the United Nations' Principles of Responsible Investment (PRI) launched in 2006. The updated version of the Financial Business Act published in 2016 retains this rule.

Unlike the Netherlands, the Danish Financial Supervisory Authority does not play an active role in advocating for and/or facilitating ESG investment by pension schemes. As the previous section discusses, the government has taken steps to shape the policy agenda concerning ESG, particularly by requiring ESG disclosure (which the DFSA monitors) and providing guidelines and incentives for financial services enterprises to incorporate ESG into their investment policy. The government has typically delegated tasks related to ESG communication and advocacy to special committees. The recommendations and findings of these committees have sometimes served as the basis for legislation, but the DFSA has typically followed a hands-off approach.

Self-Regulation

Self-regulation at the level of the pension sector has been a bottom-up process. There is no industry-wide self-regulation (as in the Netherlands), but most pension schemes now follow the UN Principles for Responsible Investment, or they apply some other approach to responsible investment, such as the OECD's Code for Responsible Business Conduct. The Danish Insurance Association (DIA; *Forsikring og Pension*), the peak organisation for pension schemes, has actively supported this development. The DIA supports the EU's Action Plan for Sustainable Investment released in March 2018, the UN's Principles for Responsible Investment, and the EU member states' obligations under the Paris Agreement.[7]

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[6] The Pension Market Council (*Pensionmarkedsrådet*) was established in 1997 to facilitate discussion on the investment policies of pension institutions.

7 https://www.forsikringogpension.dk/temaer/ansvarlige-investeringer/ansvarlige-investeringer-uddybning. Accessed 31 October 2018.

The DIA is no doubt responding, at least in part, to the initiatives and actions of occupational pension schemes. Many pension schemes started to incorporate ESG critiera into their investment strategy in the 1990s. As in the Netherlands, Danish labour market pensions are an essential complement to flat-rate, statutory provision, especially for middle and higher income workers. Unions and employers collectively negotiate the parameters of labour market pension provision, much as they do for wage policy. This means that unions and employers pursue sustainable investment policies within the constraints of collective bargaining over labour market pensions. Here, the governance of pension schemes is crucial. Collective agreements generally specify how pension schemes are administered, and regulation requires parity representation of employer and union representatives on the administrative boards that govern pension schemes. These bipartite administrative boards play a key role in steering investment policy (if they wish) toward more sustainable investment.

There are no national statistics that record the ESG activities of all pension schemes, but the largest multi-employer pension schemes (i.e. PensionDanmark, Industriens Pension) are indicative of the kinds of explicit ESG Investment policies that many schemes follow. According to IndustriensPension's most recent annual report, the scheme follows the UN's PRI policy. The pension scheme has set up a Committee for Responsible Investment to monitor and guide the incorporation of ESG in investment strategy (IndustriensPension 2017). PensionDanmark also implements a comprehensive ESG investment strategybased on the UN Global Compact into its investment policy (PensionDanmark 2018).

4.3 Germany

Overview of the Pension System

The 1957 pension reform in Germany introduced the public pay-as-you-go pension scheme guaranteeing a decent living standard. Although occupational pensions had been provided by employers for some skilled employees long before the introduction of the first public pension insurance in 1891 (especially in the chemical industry), their coverage rates and importance have stagnated and even declined since 1980s. Germany has only recently introduced a three-pillar pension system. Reforms in the early 2000s reduced the level of public pension benefits and introduced subsidies and tax breaks for occupational and personal pensions (for further details, see Ebbinghaus et al. 2011; Wiß 2018). The statutory scheme dominates pension provision: social insurance contributions shared equally between employers and employees finance about 65% of costs, with state grants covering the rest. Occupational pensions are voluntary in the private sector (with few exceptions) and mandatory for public sector employees (occupational pensions in the public sector are only partially pre-funded). However, employees are entitled to sacrifice parts of their salary to convert it into occupational pensions. Coverage rates in the private sector have increased from 38% (8.5 million) in 2001 to 47% (12.6 million) in 2015, whereas the coverage rate in the public sector has been quite stable around 5.0-5.5 million employees (TNS Infratest, 2016).

However, in international comparison, pension fund assets are rather low (6.9% of GDP) due to low contribution levels, and book reserves and direct insurances as other providers of occupational pensions. Although pension funds (*Pensionsfonds* and *Pensionskassen*) and direct insurances are the most important occupational pension schemes for new contracts and average employees (but with rather low contributions), book reserve schemes – designed mainly for senior staff – still provide half of all occupational pension liabilities. However, many employers have transferred their pension book reserves to pension funds or contractual trust agreements for accounting reasons. In this paper, we mainly refer to pension funds (*Pensionsfonds* and *Pensionskassen*) and direct insurances[8], because they are regulated by the Federal Financial Supervisory Authority (BaFin) and/or by the Insurance Supervisory Law (VAG) (in contrast, book reserve schemes are not regulated).

In terms of governance, *Pensionsfonds* and *Pensionskassen* – often run by insurance companies – can be set up for individual or multiple companies. In addition, social partners established industry-level collective pension schemes (e.g. in the metal and chemical industries, construction, banks and insurances and public sector) with considerable discretion over product development and asset allocation strategy. Social partners can participate in the governance of pension funds via collective agreements (e.g. by setting the level of contributions) and, in the case of collective pension funds, via pension fund boards (e.g. by setting the investment strategy).

National legislation

National legislation in Germany does not prohibit pension funds from integrating ESG investments in their total portfolio allocation. However, pension funds with an explicit ESG

[8] Direct insurances are not included in the OECD data, because they do not count as pension funds. The employer as policyholder takes out an insurance policy on behalf of the employee (OECD 2008).

investment strategy must consider ESG-related risks in their risk management, as required by the IORP II Directive of the EU that is currently implemented at national level. The draft of the German Ministry of Finance requires pension funds to assess risks that are related to their investments that integrate environmental, social and governance criteria (Bundesministerium der Finanzen 2018). This comprises, for example, risks linked to climate change, resource use as well as social risks. However, there is no requirement to integrate ESG factors in investment decisions of *Pensionsfonds*, *Pensionskassen* and direct insurances.

Depending on the type of investment, quantitative investment restrictions may prevent ESG investments indirectly. Equity, bond and loan caps, for example, may reduce ESG investments, as they are the main asset classes for ESG investments. In the case of equity investments, pension funds may buy or exclude shares of companies in line with ESG criteria (e.g. companies producing electric cars). Green bonds and loans allow pension funds to make a profit by lending money to companies that produce, for example, renewable energy plants. In Germany, there are – except the prudent person rule – no investment restrictions for *Pensionsfonds*, but a 35% cap for listed equities (15% for unlisted equities) for *Pensionskassen*. (OECD 2017). Furthermore, *Pensionskassen*'s investments must not exceed 50% for private sector bonds, 15% for closed-ended private equity funds, 7.5% for private investment funds (e.g. hedge funds) and 50% for loans. The only regulation directly related to ESG investments are disclosure requirements. *Pensionsfonds*, *Pensionskassen* and direct insurances need to inform plan members at the beginning of the contract and as part of their annual information if and how they integrate ethical, social and environmental criteria in their investment decisions (aba 2016).

Regulatory activities by supervisory authority

The Federal Financial Supervisory Authority (BaFin) is responsible for the supervision of pension schemes. As such, pension funds can start with their operation only after approval by BaFin. Furthermore, BaFin collects information on pension funds and requires them to submit annual reports in order to prevent deficits and to restore stability. BaFin monitors the funds' solvency and whether they invest in line with the prudent person principle and quantitative investment restrictions. However, pension schemes themselves are responsible about whether and how to consider sustainable investments. In the case of ESG investments, pension funds are required to report their ESG-related risk management. Although BaFin supports the initiative of the EU Commission about disclosure requirements for ESG investments, the

German supervisor BaFin is not a forerunner for SI. It was only in 2018 that BaFin started to get an overview and initiated a survey of insurance companies and pension schemes assessing to what extent they consider and apply SI. However, there are no common standards about the definition of ESG. BaFin wants the EU to introduce a European-wide ESG definition, measurability and comparability instead of national ESG definitions. Sustainability in investments of insurance companies and pension schemes is one of BaFin's key aspects for 2019.

Self-regulation

The association for occupational pensions (aba) is the interest group that represents all occupational pension schemes. Aba members are also companies with occupational pensions and employer associations as well as trade unions. Aba is strictly opposed to the mandatory consideration of ESG factors in pension fund investments. In 2018, the aba rejected a proposal by the European Commission that aimed to introduce new requirements for ESG investments, because it included the possibility to adopt delegated acts in the IORP II Directive. According to aba, such an amendment would conflict with EU law and would also misinterpret the existing ESG requirement of IORP II (IPE 2018a). The EU plan to add delegated acts to EU law would promote full EU harmonisation of rules, what has been explicitly excluded by IORP II.

Furthermore, the current IORP II Directive already requires pension funds to report and assess ESG-related risk of their portfolio allocation, but only if they invest in ESG assets. According to aba, the Commission planned to make the consideration of SI obligatory for any investment decisions. In a further statement, aba called – in contrast to the Dutch Pension Federation – for a voluntary instead of obligatory regulation to conduct regular surveys among pension scheme beneficiaries about their preferences regarding ESG (IPE 2018b). The development of the United Nations' Principles for Responsible Investment (UN-PRI) that started in the mid-2000s has already advanced awareness and understanding about the integration of ESG factors in investment decisions according to aba (2016). Many *Pensionskassen* and all direct insurances are organised via insurance companies. In the view of the German Insurance Association (GDV), insurance companies need to take on responsibility for future sustainability and therefore actively promotes the incorporation of ESG criteria in insurance companies' investment decisions (e.g. see the report by GDV 2018).

Despite disclosure requirements, occupational pension providers are not obliged to consider ESG factors. In fact, the major current concern in Germany is to tackle ultra-low bond yields rather than to integrate ESG factors in investment decisions. For pension providers and investment managers, it is often not clear what ESG actually means (aba 2016). There is a lack of expertise and staff. It is argued that ESG investments are complex and their consideration needs additional efforts and financial resources (more research and more experts). However, if pension funds integrate ESG factors in their investments, their approach largely depends on the ESG strategy of the sponsoring employer(s) (aba 2016).

Beyond self-regulation at the pension industry level, fund-level activities seem to matter more for ESG investments. Employees in the metal and electrician industry can enrol in pension funds and direct insurances as part of the industry-level occupational pension scheme Metallrente, founded and administered by the metal industry's social partners. The bipartite advisory board has monitoring rights and the bipartite investment advisory board has consultative rights in terms of investment principles (Ebbinghaus et al. 2011). Four insurance companies are responsible for the implementation. As one of the very few German pension institutions signatory of UN-PRI, Metallrente is committed to actively support ESG factors in their asset allocation. Metallrente also supports transparency with regard to CO2 emissions as a member of the Carbon Disclosure Project (CDP). According to the 2018 UN-PRI transparency report, Metallrente requires its external managers to engage with companies on ESG factors and to vote on their behalf. Furthermore, they incorporate ESG factors into their external manager monitoring process. The CEO has oversight and implementation responsibilities for responsible investments. However, they do not consider responsible investment in the monitoring processes for fiduciary managers.

The public sector does not serve as a role model with regard to ESG investments. ESG factors only play a minor role in the investment strategy of the prefunded voluntary public sector pension fund (VBL). The main goals are financial security and a high rate of return. Investment companies that invest their contributions are required to exclude securities of companies who produce cluster munitions.

The pension fund in the chemical industry (Chemie Pensionsfonds), which belongs to an insurance company (R+V Versicherung) and is based on an initiative by the social partners, does not invest in assets that are not in line with recognised sustainability principles. Investments in companies, for example, who produce controversial weapons as well as financial products for soft commodities are excluded (Chemie Pensionsfonds 2017). Representatives of the respective employer association and trade union have seats in the supervisory board and the investment advisory board, over which they can co-determine the strategic asset allocation.

The industry-level pension fund in the construction industry (Zusatzversorgungskasse SOKA BAU), a joint institution of the social partners, expects in the case of direct real estate investments from their contractors (e.g. real estate developers, architects and construction companies) that they comply with minimum working standards set by collective agreements (aba 2016). Trade unions can influence the strategic asset allocation via parity employer/employee seats in the investment advisory board. Further ESG criteria are considered by excluding investments in line with the UN Cluster Bomb Convention (SOKA BAU 2017). Fund managers are selected only if they meet basic ESG criteria. SOKA BAU currently prepares its own ESG strategy and plans to sign the UN PRI Principles. In line with our hypotheses, regulatory activities by national legislation and the supervisor BaFin as well as at the pension industry level are very modest. Although the topic received more attention recently, we cannot yet assess whether this is only 'cheap talk'. In Germany, ESG investments are more self-regulated at pension fund level.

5. Discussion and Conclusion

Our case studies largely support our empirical expectations. In none of our cases is there legislation that either explicitly mandates or prohibits SI. In all three countries, pension investments are guided by the prudent person rule, while pension schemes face reporting duties on their ESG investments. Two additional observations are noteworthy: while in the Netherlands a legal ban on investment in cluster munition exist, quantitative restrictions on investments in particular asset categories continue to exist in Germany for certain types of pension vehicles (*Pensionkassen*).

There is considerable variation across our cases concerning the activities of the supervisory authority. In the Netherlands, the supervisory authority played a leading role in creating incentives for pension schemes to increase their incorporation of SI in their investment strategies. The supervisory authority in the Netherlands has been particularly active, engaging in agenda-setting and regulatory leadership to create incentives for SI policy at the level of the pension scheme. The Dutch Central Bank has, for instance, encouraged SI through monitoring Dutch funds' practices and developing a more inclusive understanding of risk (e.g. impact climate change on investment risk). This contrast with Denmark, where the government dominated agenda-setting and rule-making, and Germany, where the regulatory agency similarly engaged in only limited encouragement of SI.

Finally, our cases largely confirm our expectation that self-regulation will accommodate SI in the Netherlands and Denmark, but less so in Germany. Furthermore, the co-existing diverse occupational pension vehicles in Germany confirm our hypothesis that SI (self-)regulation is more accommodating in the case of trust-based pension funds than for insurances, even within a country with a low occupational pension capitalization. Self-regulation is extensive in the Netherlands, at both the sectoral and the fund-level. Dutch pension funds have shown a commitment to SI by signing on to various codes of conduct. Individual pension funds have also been active in promoting SI policies, with several large pension funds (ABP, PGGM) being international leaders in the field of SI. As in the Netherlands, Danish pension schemes have considerable experience incorporating SI into their investment strategies, and they have been able to adjust to the requirements of the PPP within Solvency II fairly easily. While SI is actively promoted at the sector level, however, sectoral self-regulation is largely absent. Germany, finally, only has limited promotion of SI by sectoral associations and self-regulation at either the sectoral or the scheme-level is largely absent, except for industry-level pension funds. Table 2 below summarizes the findings of our analysis.

Table 2: Institutional Characteristics and Sustainable Investment Regulation

		The Netherlands	**Denmark**	**Germany**
Independent variables	**Capitalization of second pillar**	High	High	Low
	Vehicles of social investment	Pension funds	Insurance companies	Pension funds and insurance companies
Dependent variable	**Type of regulation**	Accommodating at legislative, regulatory and self-regulatory levels	Accommodating at legislative and scheme levels, moderately accommodating at regulatory level, but no sector-wide self-regulation	Accommodating at legislative level, moderately accommodating at regulatory and scheme levels, but no sector-wide self-regulation

The German *Pensionfonds* and *Pensionskassen* form a notable exception to our general findings. If they are organized collectively for one industry, they show considerable levels of

SI regulation. What sets these pension vehicles apart from other German pension providers such as direct insurances is that they are jointly created and managed by the social partners. The anomalous position of industry-wide collective pension funds in the German pension system might suggest another explanatory factor, namely the presence of corporatism within the pension system. Both the Netherlands and Denmark – the two cases where we found more accommodative orientations towards SI - are strongly corporatist in that collective agreements cover more than 90% of the labor market, and bipartite bargaining institutions are very strong. This means that pension plan members have considerable influence over investment strategy (within legal constraints), and their representatives have used this influence to pursue SI. While this is not the case in Germany at the national level, a similar mechanism might be present in those sectors covered by industry-wide collective pension funds.

In short, our case studies provide mixed evidence for our expectation that national regulatory regimes will be more accommodating to SI in pension systems dominated by pension funds (trusts) than in insurance-based systems. The pension fund model prevalent in the Netherlands certainly correlates with a high degree of accommodating regulation of SI, but this is also true of Denmark, an insurance-based system, albeit to a lesser extent. We suspect that the very high levels of capitalization in Denmark and the Netherlands means that pension boards and investment managers have more experience and knowledge of investment issues, including SI, than similar actors in Germany. The legacy of strong corporatism and robust institutions for employee representation in pension schemes in Denmark and the Netherlands may also have contributed to more SI-accommodating regulation. The findings for the German case, a hybrid of a trust-based and an insurance-based system, however, suggest that this lack of experience may be partially offset by a normative orientation towards SI among pension vehicles with strong employee representation. This hypothesis, however, should be explored further in future research, that more explicitly compares systems of pension governance with and without employee representation.

Additionally, future research should expand the focus beyond the national level of the political economy. Of course, the regulation of pension investment is, however, an increasingly supranational affair (Hennessy 2013). EU members with funded pension schemes are already subject to either EU life insurance regulation (Solvency II) or EU pension fund regulation (the IORP Directive). The upcoming IORP-II Directive, for instance, has already attracted controversy for its requirement to integrate ESG criteria in investment decisions. Many retirement institutions across the member-states, including pension funds, prefer voluntarism (Ottawa 2018). The European Commission hopes to further increase capital flows towards sustainable investment, under its Action Plan on Sustainable Finance. One of its proposed measures is to change fiduciary rules for institutional investors, imposing a reporting duty on sustainable investment (European Commission 2018). Other sources of international regulation include soft law, such as the UN Sustainable Development Goals and Principles for Responsible Investment and the OECD's code of conduct on Responsible Business Conduct got Institutional Investors.

Such developments at the international and supranational levels are aimed at strengthening SI investment by retirement institutions across the EU member-states. Unfortunately, it has not been possible to connect the outcome variable of SI regulation for pension funds to actual SI practices in the three case studies. It has proven difficult to acquire data that are both reliable and comparable on SI by pension funds. EUROSIF (2018), for instance, reports the assets under management for all types of institutional investors. It relies on self-reported data from asset owners, based in twelve European political economies. Its data also suffer from double-counting, as it does not correct for investments falling under multiple SI categories. It is therefore not possible to disentangle sustainable investments by funded pension schemes from other institutional investors, nor is it possible to determine the overall extent of SI by country. In the absence of quantitative data, further research of a qualitative nature will have to be conducted.

To conclude, despite the growing attention to sustainable investment by pension funds, from asset owners and policymakers alike, the CPE scholarship on this topic is still in its infancy. Not surprisingly, therefore, a large knowledge gap still exists. This gap results, theoretically, from a narrow focus on specific types of finance (e.g. banks), particularly in the CMEs. It results empirically from the lack of reliable, comparative data on the actual SI practices by pension funds. It is foreseeable that SI by pension funds will only expand in coming years. CPE scholars will therefore have to develop new conceptual and methodological tools to make sense of these fast-moving empirical developments. This paper has offered a starting point by emphasizing how national regulatory regimes might matter for SI by pension funds.

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