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Firm Democracy

Its empirical relevance and a new way to measure it.

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Introduction

Battles for democratisation and emancipation have been going on for centuries. Historically, they have mainly focused on state-level institutions. In the 20th century however, these battles have also aimed at the democratisation of firms, first coming from class struggles and more recently pushed by broader societal and ecological concerns. The quest for democratisation can be defined as the quest for human emancipation, that is the consideration due to all human beings as "equals in dignity and rights," as stated in the Universal Declaration of Human Rights reflected in the mode of government. Obviously, the reality of most firms stands far away from this ideal. Yet it has been proposed to account for major innovations at firm level as testimonies for this quest (Méda, Battilana, and Ferreras 2020): the recognition of labour rights and collective bargaining at the turn of the 20th century, the establishment of works councils, and more recently the establishment of European Works Councils (i.e., worker assemblies within firms) and the expansion of codetermination mechanisms in many EU countries (i.e., the presence of workers on corporate board). In this reading, firms are on a path of democratisation, that they can resist or choose to deepen further –as reflected in current debates at the EU Parliament, which voted last December a resolution seeking More Democracy at Work (European Parliament Press Releases 2021) or in Spain, where the Minister of Labour has voiced her will to democratise firms further (Pérez 2022).

Most firms are traditionally capitalistic, and both owned and controlled by shareholders. The list of weaknesses of this model is substantial from a societal perspective. More and more we see the need for changing the balance of power between capital and labour and pushing for what is called firm democratisation. Though I personally clearly support this movement, I will aim to be agnostic from this personal preference within the context of this masters' thesis by reviewing how the scientific literature in economics addresses this issue.

Since the theoretical arguments for firm democratisation have been flourishing and have gained significant backing and credibility in the last few years, my aim in this thesis is to focus more on the realm of empirical research and findings. I think that the academic community, and society more broadly, would benefit from a substantial understanding of the empirical importance of firm democracy for a wide variety of broader societal outcomes, especially as we increasingly consider firm performance to be multidimensional (i.e., going beyond economic aims). The first part of this thesis (Part I) will therefore aim to provide an overview of the empirical relationships that have been found (or not) between different types of institutional designs of firm democracy and the performance of firms at the economic, social, and environmental levels. This will show that democratisation is an empirically very relevant topic to assess for firms.

The next two parts of the thesis will turn towards the challenge of measuring firm democratisation. In Part II I shall turn to the ways we measure firm performance and will focus on the ESG Ratings which are the most widely used ratings measuring firm non-financial performance (covering their environmental, social and governance-related dimensions, hence the structure of firm government and potential democratisation as well). I will show that ESG ratings, though very prevalent around the world to assess the non-financial performance of firms, are very ill-suited to support any measurement of firm democracy.

Based on the empirical findings coming from the economic literature in Part I, (i.e. democratic governance significantly impacts firm (non-)financial performance), and the limitations highlighted in Part II (i.e., currently used measures are ill-suited to quantify democratic governance and other non-financial factors), the question becomes: How can we address the need of measuring the firm performance at the Democracy level, as well as the impact of types of firm democracies on other societal factors. The vacuum in the current literature has prompted me to attempt the construction of an index of firm democracy to enable its measurement. We should have the tools to measure or categorise different types of democratic institutional designs of firms and to evaluate the links of democratisation of firms with economic, social, and environmental outcomes. This is what I attempt in Part III through a methodical process underpinned by theoretical principles. I am aware that this is a very ambitious and difficult task that goes well beyond the scope of a masters' thesis. The difficulty of the task should not prevent us from making a first attempt, based on our findings in Parts I and II. In the near future, if we have significantly improved ESG ratings and a robust index of firm democracy, we would possess two tools that could enable future research to enhance our understanding of the multidimensional performance of firms and the links between firm democracy and other societal outcomes.

I. Part I: Why We Should Study Firm Democracy Performance: Overview of Empirical Findings

A. Introduction

When we talk about the importance of firm democracy, it is critical to understand how this institutional and political concept is linked to a variety of topics such as the environment, social conditions, and even more basic: the firm's bottom line. Once we consider firm performance as multidimensional, we can assess the links between firm democracy and a variety of other aspects.

I read a broad array of recent and relevant peer-reviewed studies with robust methodologies. In general, empirical studies have assessed the effect of firm democracy by looking at the effect of specific institutional designs which make firms more democratic. The choice of institutional structures that have been used in empirical research typically has been made based on relevance and data availability. Within the literature on firm democracy, we find three (non-mutually exclusive) main institutional designs that can be considered mechanisms implementing some form of democracy within firms. Though there are other miscellaneous democratic institutional designs such as profit-sharing (i.e., incentive schemes which reward workers based on the firm's profit on top of their existing wage) and employee stock purchasing plans (i.e., plan according to which free or discounted shares of stock are given to workers who can buy these shares) which may be relevant, the limited scope of this work and/or empirical evidence is too limited to analyse them in depth in this thesis.

The democratic institutional designs I will study in this work are the following:

1. Collective Ownership: Direct worker-ownership of the firm's shares. The most democratic version of this are cooperatives.
2. Board-level Employee Representation (BLER): integration of selected employee representatives on the firm's board (from a third to a half in the samples researched).
3. Workers' Councils: Assemblies of workers and worker representatives at the establishment-level (i.e., a sub-group of a given firm. Typically present in a specific factory/production site to propose and vote on policies related to labour conditions.

As such, it is clearly possible to identify institutional differences between firms with democratic implications. However, I should highlight a limitation in the current available empirical literature regarding its external validity: most studies have been performed in Europe (even mostly in Germany), which means that we end up with findings and empirical backing based on Eurocentric academic research. We should bear this in mind when making inferences based on this literature.

We can categorise empirical research related to firm democracy in three groups of societal outcomes:

1. Economic Performance: Firm profitability, revenue, productivity, and innovation.
2. Social Performance: Levels of hiring and worker dismissal, wage levels, job satisfaction, and gender equality.
3. Environmental Performance: firm policies and practices on greenhouse gas emissions, biodiversity, waste management, water use, etc.

For each factor, I shall first outline the causal mechanisms described by researchers to link it with firm democracy. Subsequently I will present the main empirical findings on these hypothesised relationships. The guiding questions in this section will be the following:
Question 1: Where does the literature stand on the existence of a relationship between a certain democratic institutional design and a certain societal outcome or not?
If Question 1 is answered affirmatively regarding the existence of a relationship, then we must also answer Question 2:
Question 2: If there is a relationship, does the literature support a positive or negative relationship between the given democratic institutional design and given desirable outcome?

Most studies focus on board representation and workers' councils, though the limited amount of studies on collective ownership find that it can have positive impacts on job satisfaction, conscious use of natural resources, and economic outcomes.

Board-level employee representation leads to higher worker productivity but has no clear effect on other economic outcomes and innovation. Socially, it appears to decrease involuntary layoffs and gender pay gaps, and increase solidary wage declines in times of crisis, and job satisfaction. The only study on environmental performance found a positive impact.

The evidence from workers' councils, sometimes referred to as a form of establishment-level democracy, finds better firm profits, productivity, and innovation. Socially, though their impact on hiring and wages is questioned, workers' councils further increase job satisfaction and decrease dismissal rates. Though most environmental decisions happen at firm level, workers' councils do lead to higher investments.

This thesis will thus highlight that firm democratisation on average does not lead to undesirable outcomes. At a granular level, it has even been associated with strong positive results in terms of productivity, lower levels of involuntary worker layoffs, higher levels of job satisfaction, lower levels of gender-based wage differences, and the adoption of more environmentally friendly policies.

The table below summarises the main findings of the empirical literature per societal outcome:

Table 1 - Summary of main findings between firm democracy and societal outcomes

Type of outcome	**Outcome**	**Main findings**	**Empirical support**	**Geography**
Economic Performance	Strictly Economic Performance: Profitability, Revenues & Firm Survival.	Mixed results.	40 studies: mostly econometric, but some case studies as well.	Mostly Germany, some in other European countries, and a few beyond.
Economic Performance	Productivity	Mostly positive results.	28 studies, mostly econometric.	Mostly Germany, some in other European countries, and a few beyond.
Economic Performance	Innovation	Mostly inexistent significant effects.	8 studies, mostly econometric.	All in Germany.
Social Performance	Hiring & Worker Dismissal	Mixed results regarding hiring, but clearly lower levels of involuntary worker dismissals.	11 studies, all econometric.	Across Europe, and one in Uruguay.
Social Performance	Wage levels	Most studies find either no effect, or small positive effects. Results also show solidary wage decreases in times of crisis.	16 studies.	Across Europe, though clearly focused on Germany.

Social Performance	Job satisfaction	Results are overall quite positive.	17 studies.	Focused on Europe, though studies across other 'western' economies too.
Social Performance	Gender equality	Less wage inequality between men and women.	5 studies.	4 studies in Germany, and one in Norway.
Environmental Performance	Environmental policies	More democratic firms tend to adopt more environmentally-friendly policies.	4 studies.	Germany and France.

These findings emphasise the relevance of studying firm democracy within our economic system, and to measure its various dimensions and evolution at the firm level adequately in order to better grasp its impact.

B. Economic Performance

The goal of maximising shareholder value has long been considered the dominant objective for firms (Friedman 1970). Since firm democracy has been found to influence economic performance of firms, it is worthy of investigation solely for that reason already. More precisely, firm democracy has been linked with profitability, firm survival, revenue, productivity, and innovation. Empirical research suggests mixed results in terms of profitability and firm survival. Interestingly, researchers seem to converge towards the view that there are positive productivity effects in more democratic firms. Finally, it appears that more democratic firms are not less innovative.

1. Causal Mechanisms

The economic performance of firms, generally considered as the firm's financial health, has been measured by its profits, revenue, return on equity, and survival rates. The economic performance also includes the firm's productivity, and innovation. Theoretically, the causal mechanisms presented to explain the potential effects of firm democratisation on economic performance are mixed.

Positive effects of firm democratisation on economic performance

Two main positive effects which were brought forward by the literature. Let's call them the 'Information-Sharing' and the 'Long-term thinking' arguments.

The first positive effect that has been associated with firm democratisation stems from the following hypothesis: consultation through workers' councils could improve the firm's economic performance in virtue of the larger and more diverse perspectives being considered when making certain decisions (Rogers and Streeck 1995). Assuming that they have additional information and perspectives which the management does not possess, workers, when consulted, will highlight points which managers could fail to see in virtue of their position within the firm. If we translate this within the language of traditional economic theory, this relates to a reduction of information asymmetries and agency costs between labour and management (Fauver and Fuerst 2006). Indeed, if there are fewer incentives to use private information in an opportunistic way, this may improve outcomes, assuming that more information means better decision-making. Kees Looise, Torka, and Ekke Wigboldus (2011) share this analysis and emphasise the benefit of worker participation to channel conflicts of interests between employees and employers and stimulate desired attitudes, leading to better organisational performance. As such, the consultation and integration of worker perspectives may be conducive to better decision-making in the firm through greater and more accurate information flows (Tekleab and Taylor 2003; Wang 2018; Mitchell 1973). This can happen through collective ownership, board representation, workers' councils, and even more informal exchanges.

The second positive effect comes from the longer-term thinking which arises due to a greater alignment of incentives and more job security in more democratic firms. Rogers and Streeck (1995) have suggested that (1) co-determination (i.e., more firm democracy) leads to more job security, and that (2) more job security induces workers to take a longer run view of the objectives of the firm. Specifically, Bruque-Cámara et al. (2003) have asserted that it is not all aspects of firm democracy, but specifically collective ownership which leads to greater loyalty and commitment to the organisation by workers. Once we suppose that workers are motivated by profit and more money, then we may infer that if they own part of the firm in which they work (i.e. they are also beneficiaries of dividends and economic value from the firm's activities), they will be more motivated to increase the firm's profit and will put more energy and effort in order to achieve this goal (Long 1980). Similarly, Ghirardello, Seignour, and Vercher - Chaptal (2018) have argued that employees, in virtue of their job precarity, tend to suggest solutions, initiatives and projects which are less risky. As a result, this enables companies to obtain better conditions in their loans (e.g., lower interest rates, longer maturity, etc.) since banks reward strategies which are less risky. Researchers such as Burdín (2014) thus suppose that worker-managed firms will be associated with more employment stability and long-term thinking, supporting firm survival and better strategic decision-making.

Negative effects of firm democratisation on economic performance

We can also highlight two main negative effects of democratisation on economic performance: the 'Slower decision-making' and the 'Worker hold-up' arguments.

Firstly, many authors have argued that worker participation slows down decision-making since it requires involving more people. Slower decision-making is subsequently associated with poorer outcomes due to the lack of reactivity and the opportunity cost when decisions are still in standby. Addison et al. (2000) have for example argued that the consultation through co-determination and workers' councils causes delay in the execution due to the time spent discussing and consulting workers. This was first theorized by the Freeman and Lazear model (1995) stating that, though the worker council and employee involvement will at first increase economic performance through information-sharing, it will lead to a decrease in profit-making past a certain point of democratisation due to the delay in decision-making. In a sense, this suggests that there is a (socially) optimum level of employee involvement which maximises profit. Employee involvement and firm democracy would therefore be a double-edged sword.

Secondly, the 'worker hold-up' argument suggests that employees, once they get more power in decision-making, will increase their wages and reduce the amounts of investments made, reducing the possibility of companies to innovate and be more productive. As such, even though firms may have become more productive due to the information-sharing and long-term thinking, this is cancelled out (and potentially worse than that) by the increase in wages. If we roughly define productivity as the ratio between a firm's output and its labour costs (i.e., Y/L), then the higher L will reduce this ratio and decrease the firm's productivity.

2. Empirical Results

There seems to be a consensus around the idea that firm democratisation will influence economic performance. The question rather becomes split into two sub-questions: (1) Which mechanisms lead to an effect? (2) Do effects end up cancelling themselves out? In that sense, an empirical study which shows zero effect may be blinded by the cancellation of more granular effects.

There are a wide variety of ways that researchers have performed studies to assess the effect of firm democratisation. The most robust way considers the implementation of a new national law on new specific mandatory democratic institutional arrangement as an exogenous shock, as in some of my studies following German law changes. Other ways include direct comparisons through difference-in-difference approaches and sample-matching.

To perform this analysis, I have gathered the most recent and most relevant studies that assess the links between firm democracy and (1) Strictly Economic Performance, (2) Productivity, and (3) Innovation.

We generally observe that the ‘worker hold-up’ argument does not stand on strong empirical ground. Indeed, the available evidence suggests that workers’ councils are the most significant influencer on economic outcomes, with positive relationships observed for all three factors of economic performance. Comparatively, board representation seems to be showing mixed results regarding strict economic performance and rather positive results on productivity and innovation. This suggests that establishment-level democratic institutional changes (e.g., workers’ councils) have a more important impact than firm-level changes. It is also quite clear that the effects of collective ownership are vastly under-studied, and merit more research.

Table 2 - Relationships between Institutional Design and Economic Outcomes

		Societal Outcomes		
Democratic Institutional Design		**Strict Economic Performance**	**Productivity**	**Innovation**
	Collective Ownership	Positive Relationship supported by limited literature.	Unknown	Unknown
	Board Representation	No agreement on the existence of a relationship, though it is positive when found.	Most literature agrees that there is a positive relationship with worker productivity.	One study supporting a positive relationship and one study rejecting the presence of a negative relationship.
	Workers' Council	Mostly positive relationships are found in the literature.	Almost a consensus surrounding a positive relationship with worker productivity	Mixed results regarding innovation improvements as such, but generally rejecting the hold-up argument.

a) Strictly Economic Performance

The 37 empirical studies related to economic performance I analysed cover a time-period of around 40 years ranging from 1979 until 2021. Strictly Economic performance is broadly understood as profitability, revenues, and firm survival (i.e. not productivity and not innovation). Geographically, most of them are focused on German firms, in virtue of the 'Midbestimmung' (codetermination) system and laws in place, but more recently we have seen studies analysing firms in other countries such as Finland, Spain, Japan, Uruguay, the US, and the UK. They include a variety of different methodological approaches going from case studies to econometric methods, and focus on board representation, workers' councils, and employee ownership. Most studies have assessed the impact of board-level representation; this results from Germany's implementation of such obligations in the second half of the 20th century.

The majority of studies identify positive effects of firm democracy on economic performance, from profitability to firm survival and revenue. This is generally the case when employees have established workers' councils and offers support to the 'information-sharing' and 'long-term thinking' hypotheses. This also suggests that we may quite confidently reject the 'slower decision-making' and 'worker hold-up' arguments. We also find that the literature is mostly disagreeing on the (presence of) effects related to board-level employee representation.

Table 3 - Firm Democracy & Strictly Economic Performance – Main findings

		Societal Outcomes
Democratic Institutional Design		Strictly Economic Performance
	Collective Ownership	Positive Relationship supported by limited literature.
	Board Representation	No agreement on the existence of a relationship, though it is positive when found.
	Workers' Council	Mostly positive relationships are found in the literature.

<u>Collective Ownership:</u>

There aren't many studies analysing the impact of collective ownership structures on economic performance. However, the studies that do exist support both the existence of a relationship and the positive direction of this relationship. Two studies really stand out. Firstly, O'Boyle, Patel, and Gonzalez-Mulé (2016): They conducted a meta-analysis of 102 samples covering 56,984 firms. In their analysis, employee ownership has a small yet positive and statistically significant relation to firm performance. Their analysis covered a variety of different studies in terms of design: some studies assessed a change in performance pre-employee & post-employee ownership adoption within the same companies, whilst other studies compared companies with employee ownership to firms without employee ownership (with the ambition of claiming 'et ceteris paribus'). Secondly, Agirre, Reinares, and Freundlich (2015) performed a case study on the Mondragon Corporation. This cooperative which has many cooperative subsidiaries presents a fascinating example of commitment to democratic principles, solidarity and competitiveness. Their study uses a partial least squares method which is robust for small to moderate sample sizes (Cassel, Hackl, and Westlund 2000). It suggests that Mondragon's democratic management model increases organisational commitment among workers and leads to a better business performance.

<u>Board-Level Employee Representation:</u>

Most studies either assess the implementation of a one-third representation, or the move from one-third to parity. In general, we find very mixed results regarding the existence of a statistically significant relationship with economic outcomes. In case a relationship is found, it is generally positive.

According to Conchon (2011), board-level employee representation has been generally shown to improve firm performance. For instance, Renaud (2007) found a positive effect of the change from one-third to parity board representation in Germany, based on a sample size of 252 firms. This has been recently mitigated by Jäger, Schoefer, and Heining (2021) and Harju, Jäger, and

Schoefer (2021). They find that German and Finnish board-level representation have zero or even slightly positive (statistically insignificant) effects on productivity, firm survival, labour productivity, revenue, and profitability. Many studies do not find any meaningful statistical effect of firm democracy on the same variables, mitigating the conclusions we may draw from the empirical literature. Older, mostly correlational literature on German board-level representation, finds on average zero effects (Conchon 2011). Even more recent studies on board-level representation, based on more accurate data regarding the co-determination status of firms, do not find statistically significant positive or negative effects (Wagner 2011). A few studies have even found a negative effect of board representation. For instance, Boneberg (2010), based on a sample of 173 firms, has found that board-level employee representation is positively related to productivity, but negatively related to profitability, partly due to a wage increase.

Workers' Councils:

Workers' councils are generally associated with positive effects on profitability (Jirjahn and Smith 201; Müller and Neuschäffer 2020; Schnabel 2020; Jäger, Noy, and Schoefer 2021). This has mostly been shown in Germany, but there are studies which evaluated such effects in other countries too, enabling us to move away from a Eurocentric empirical assessment. Morishima (1991), for instance, showed that joint consultation committees in Japan, which we may consider to be quite similar to workers' councils, demonstrate a positive relation between committee effectiveness and firm profitability. The influence of work councils on firm survival has also been widely debated. Burdín (2014), using a long panel of thirty thousand Uruguayan firms, has shown evidence of better firm survival for firms with workers councils compared to traditional firms. The likelihood of firm failure in Burdin's study is 29% higher for conventional firms compared to their peers with workers councils. In this case, the author suggests that it is due to higher employment stability and long-term commitment of workers to the firm, supporting the long-term thinking hypothesis.

However, there are also studies on workers' councils which do not find statistically significant relationships. For instance, the reform-based, quasi-experimental studies of Finnish shop-floor representation by Keskinen (2017) and Harju, Jäger, and Schoefer (2021) find no effects on firm performance. Even further, Addison, Schnabel, and Wagner (2001) have found that there is less labour fluctuation but a lower profitability coming from higher wages. As such, we could infer that there is strong support for the existence of a relationship, and if a relationship is found it is generally positive.

b) Productivity

The majority of studies reviewed identify positive effects of firm democracy on productivity, which offers even more support to the rebuttal of the 'worker hold-up' argument. This is especially the case regarding workers' councils, though we can find corroborating evidence looking at board representation as well.

The 27 empirical studies related to economic performance I analysed, some being the same as the ones looking at profitability, also cover a time-period of around 40 years ranging from 1982 until 2021. Geographically, they are also mostly focused on German firms, though some of them look at other countries such as China, France, Japan, and the US. This time there are more studies which assess workers' councils, but their methodological approaches are quite similar.

Table 4 - Firm Democracy & Worker Productivity – Main findings.

		Societal Outcomes
Democratic Institutional Design		**Productivity**
	Collective Ownership	Unknown
	Board representation	Most literature agrees that there is a positive relationship with worker productivity.
	Workers' Council	Almost a consensus surrounding a positive relationship with worker productivity

<u>Collective Ownership</u>

There is no particularly significant and relevant empirical literature that enables us to infer conclusions regarding the effects of collective ownership by employees specifically on their productivity. We can infer from the discussion of strictly economic performance that profit would probably only increase as a result of collective ownership if worker productivity increases, but we cannot support this empirically.

<u>Board-Level Employee Representation</u>

A large amount of research has focused on board-level representation, and suggests that the implementation of some employee representation, or even the move from some representation to parity at the board level between employees and management is associated with positive outcomes on labour productivity. For instance, FitzRoy and Kraft (2005) have assessed the changes in 179 firms which moved from one-third representation to quasi-parity following the 1976 law in Germany requiring this move. Their results show a significant positive relation between the move to parity between workers and managers and labour productivity. This shows that firm democratisation not only leads to a more equal surplus redistribution between workers and shareholders, but also benefits the firm’s labour productivity. Such results were corroborated two years later by Renaud (2007), who finds that a move to parity in 252 German firms seems to increase productivity as well as profits. Most recently, Jäger, Noy, and Schoefer (2021) also found moderate positive effects on productivity, wages, and job stability.

This positive assessment of board representation has been mitigated by a study by Wagner (2011), who for instance showed that one-third board level employee representation in West Germany manufacturing firms does not seem to be associated statistically significant positive or negative productivity levels. FitzRoy and Kraft (1993) also noted that there may even be a negative effect of firm democratisation on firm democracy in Germany due to the worker hold-up argument. However, since these studies are fewer and older than the most recent empirical literature on the subject, we may reasonably conclude that board representation comes with a positive relationship with worker productivity.

<u>Workers’ Council</u>

Productivity effects are particularly found at the establishment level, when workers’ councils decisions are implemented and democratic practices are enhanced at the more local level (e.g. at the factory level for industrial and manufacturing companies). Smith (2006) found that mandated Employee Participation Rights (EPRs) in the form of workers’ councils in Germany lead to higher productivity. Mueller (2012) has found that establishments with a workers’ council are on average 6.4% more productive. These findings have been nuanced by other researchers. Addison, Schnabel, and Wagner (2001) found that workers’ councils are only associated with higher productivity in large establishments. This was explained by the fact that worker deliberation only provides beneficial effects on productivity when there is a minimum size in terms of production volume and number of workers. Hubler and Jirjahn (2003a) have shown that workers’ councils are more beneficial towards productivity in establishments which are covered by industry-level collective bargaining by trade unions in Germany. Indeed, when establishments are not covered by collective bargaining agreements, workers’ councils tend to be more engaged in rent-seeking activities to increase workers’ wages compared to productivity. In 2015, Mueller (2015) found that workers’ councils have the most beneficial effects at low levels of productivity. This was identified by analysing workers' councils' regression coefficients along the unconditional log labour productivity distribution in Germany. A few years later, Mueller and Stegmaier (2017) in their study based on a panel of firms from the Institut für Arbeitsmarkt und Berufsforschung (IAB - (Institute for Employment Research), found that the first five years after the introduction of workers' councils there is a negative statistical effect on productivity, but that that this becomes significantly positive (11% higher) in the five next years after that.

There is only one study which rejects the presence of a relationship. Looking at workers' councils in France, Fairris and Askenazy (2010) find no evidence of a positive impact on firm productivity.

As such, due to the empirical findings and the closeness to the causal mechanisms, we can infer that the presence of works councils tends to increase the workers' productivity.

c) Innovation

There are fewer studies on the link between firm democracy and innovation performance: I have found eight relevant ones, ranging from 2001 until 2019. This is probably due to the more 'intangible' nature of this factor. However, it can be measured through proxies like the number of patents filed, the number of patents granted, investment in R&D, and the effectiveness of implementation of new digital technologies. Except for one based in the Netherlands, all these studies have evaluated the effect of firm democratisation on German firms. Given the size of the Germany economy and the vast number of German firms, this set of studies still seems relevant for this thesis.

In this case, the results depict a clear picture of the dynamics at hand: there is no reduction of innovation in more democratic firms. As such, we may quite reasonably, though limited in terms of external validity, reject the 'hold up' hypothesis. More democratic firms do not appear to be less innovative.

Table 5 - Firm Democracy & Innovation – Main findings.

<table>
<tr><td></td><td></td><td>Societal Outcomes</td></tr>
<tr><td rowspan="2">Democratic Institutional Design</td><td></td><td>Innovation</td></tr>
<tr><td>Collective Ownership</td><td>Unknown</td></tr>
</table>

	Board Representation	One study supporting a positive relationship and one study rejecting the presence of a negative relationship.
	Workers' Council	Mixed results regarding innovation improvements as such, but generally rejecting the hold-up argument.

Collective Ownership

No studies have been found regarding this topic.

Board-Level Employee Representation

Some positive effects from board-level representation were found by Kraft and Stank (2004). They used the number of patents granted as a proxy for innovation, and studied 155 Germany manufacturing firms between 1971 and 1990. Kraft, Stank, and Dewenter (2011) found that firm democratisation at the board level does not seem to be associated with higher or lower innovation. They used the number of patents filed as the relevant proxy, controlled for firm size, and assessed the effect of employee representation in Germany after the 1976 law on 148 firms.

Workers' Councils

To assess the effect on innovation at the establishment level after the implementation of workers' councils, researchers have used a variety of metrics such as management perception, and efficiency of the implementation of digital technologies. Though these are not exactly the same as other studies, they still offer a helpful approximation of innovation in firms. Van Den Berg, Grift, and Van Witteloostuijn (2011) based their study of Dutch firms on the former. They find a significant positive effect of workers' councils on the management's innovative leadership style and perception of innovation work. The latter was used in a Germany study by Genz, Bellmann, and Matthes (2019), who use establishment data from the IAB (Institute for Employment Research) Establishment Survey of 2016 combined with individual employee data from the Federal Employment Agency and occupational level data about the physical job exposure. Though firms with workers' councils are associated with lower equipment levels with digital technologies, once firms have decided to integrate these digital technologies workers councils do seem to foster a more efficient adoption and implementation/

At the establishment level, Addison, Schnabel, and Wagner (2001), Jirjahn (2010), and Addison et al. (2007) found no evidence of a reduction in innovative activity as a result of workers' councils in Germany. The latter show that workers do not only have a short-term perspective and support decisions which are in the long-term interests of the firms and which require investments in innovative activities and research & development. We should therefore not make any major empirical inferences, though the available evidence supports the rejection of the 'worker hold-up' argument.

C. Social Performance

Beyond purely ethical reasons or activist pressure, factors such as hiring rates, job satisfaction and dismissal rates matter to a firm's bottom line. The current 'Great Resignation' (i.e., voluntary mass exit from the workforce) and associated tight labour market especially highlights this (Fuller and Kerr 2022). Firm democratisation has been associated with a variety of social outcomes for the firm's workers. Specifically, research has been done on four main areas: (1) Hiring and Dismissal rates, (2) Wage levels, (3) Job satisfaction, and (4) Gender Equality. In this part we shall explore the causal mechanisms behind such relations, as well as the main empirical research on the subjects. We will show that more democratic firms layoff fewer workers, adopt solidary wage reductions in times of crises to prevent layoffs, show higher levels of job satisfaction and lower gender-based wage discrimination. Most studies are focused on board representation and workers' councils, and the societal outcomes tend to come more from the latter. An overview of results can be found in the table below.

Table 6 - Relationships between Institutional Design and Social Outcomes

		Social Outcomes				
Democratic Institutional Design		**Hiring**	**Dismissal**	**Wage levels**	**Job satisfaction**	**Gender Equality**
	Collective Ownership	Unknown	Unknown	Unknown	Limited evidence in favour of positive relationship, though some mechanisms definitely require further research.	Unknown
	Board Represent ation	Unknown	Most studies agree that there are fewer involuntary dismissal occurring with	No effect in normal times. In crises board representation has been shown to	Generally positive results found from board representatio n, though the evidence is	Board representa tion is associated with lower

			board representation.	support solidarity between workers and collective wage decreases.	limited and some mechanisms suggest mixed results.	gender pay gaps.
	Workers' Council	Mixed results.	Most studies agree that there are fewer involuntary dismissal occurring with workers' councils.	The presence of a positive wage effect is debated in the available literature. Most studies find a small or no positive association.	Generally positive results.	Evidence suggests that the implementation of workers' councils leads to a decline in the gender pay gap, higher job satisfaction among female workers, and more family-friendly policies.

1. Hiring & Worker Dismissal

As we can expect, participation of workers in firm decisions, and especially on questions related to working conditions and employment should have an influence on firms' hiring and dismissal practices. Current literature shows that hiring practices are influenced by firm democratisation, though effects have been found in both directions (i.e., more hiring and less hiring). There is much more agreement around the fact that firm democratisation leads to lower worker dismissal rates.

Causal Mechanisms

Hiring

The causal mechanisms at play between firm democratisation and hiring decisions are still quite ambivalent. On one hand, some have argued that employee representation will induce higher job security for current employees and hence a lower openness/tendency to hire new workers. This has been called the 'monopoly' (Jirjahn 2010) or 'insider-outsider' (Lindbeck and Snower 1988) mechanism. On the other hand, one could also expect that better performance arising from worker democracy provides an incentive for firms to hire more workers as their firm grows and becomes more productive.

<u>Worker Dismissal</u>

The causal mechanisms behind the interaction between firm democratisation and worker dismissal are more straightforward. In general, worker representatives will do their best to protect the jobs of current employees through both board-level influence and decision-making rights at the establishment level in workers' councils (Jäger, Noy, and Schoefer 2021)**.** This typically takes the form of insurance arrangements whereby workers accept slightly lower wages in exchange for the minimisation of layoffs (Kim, Maug, and Schneider 2014). Gregorič and Rapp (2019) have also claimed that board-level employee representation should lower the probability of crisis-induced dismissals because of the lower information asymmetry and moral hazard in employee-employer relations, which enables better labour-cost adjustments.

Empirical Results

I have found 11 relevant studies, ranging from 1996 until 2021. Though the majority of studies are focused on Germany, there has been some research in other countries, mainly in Scandinavia and Uruguay. The results are quite ambiguous regarding hiring practices, though they are quite clear on the dismissal rates: more democratic firms dismiss fewer workers. More specifically, we actually don't know much about the effects of collective ownership on hiring & firing decisions. The available evidence shows that: the literature is divided on the effect of workers' councils affecting hiring decisions, and we agree that both board-level employee representation and workers' councils lead to fewer involuntary dismissals. The latter supports the positive causal mechanisms which were outlined above.

Table 7 - Firm Democracy & Hiring-Firing - Main findings

<table>
<tr><td></td><td></td><td colspan="2">Societal Outcomes</td></tr>
<tr><td rowspan="4">Democratic Institutional Design</td><td></td><td>Hiring</td><td>Dismissal</td></tr>
<tr><td>Collective Ownership</td><td>Unknown</td><td>Unknown</td></tr>
<tr><td>Board Representation</td><td>Unknown</td><td>Most studies agree that there are fewer involuntary dismissal occurring with BLER.</td></tr>
<tr><td>Workers' Council</td><td>Mixed results in the literature.</td><td>Most studies agree that there are fewer involuntary dismissal occurring with works councils.</td></tr>
</table>

Hiring

Initially the literature suggested that hiring rates tend to increase with firm democratisation. Jirjahn (2010) showed that there was a positive relation between the presence of workers' councils and employment growth in German manufacturing establishments. This was also observed in Uruguay, with the work of Burdín and Dean (2012), showing that worker-managed firms set employment growth as one of their core priorities. However, the latest studies performed on shop-floor representation through workers' councils in Finland and Germany find contrasting results (Keskinen 2017; Gralla and Kraft 2018). As such, regarding hiring, there seems to only be studies looking at the effects related to Workers' councils, and these present quite mixed results.

Dismissal

Overall positive effects have been found with regards to the dismissal rates of firms when democratisation occurs. Frick (1996) has published the first paper on the effect of workers' councils on layoffs. He analysed a representative sample of German private sector firms that must obey the Dismissal Protection Act of 1969 and the Workers Constitution Act of 1972, and found that the presence of workers' councils is associated with a 1.6% lower dismissal rate. However, in 2006, Kraft (2006) showed that Frick's econometric methodology could be improved in several ways, mitigating the strength of Frick's conclusions. For instance, Kraft points out that fixed term contracts which are not renewed could be included within the count of dismissals, whereas Frick had excluded them. Hirsch, Schank, and Schnabel (2010) corroborate Frick's findings by finding that the presence of a workers' council comes with a lower rate of layoffs in German firms.

More recently, Gregorič and Rapp (2019) and Kim, Maug, and Schneider (2014) studied layoffs, and have found similar dynamics with the implementation of board-level employee representation in Germany and Scandinavian countries. Specifically, it is the number of crisis-induced layoffs which is lower as a result of insurance systems. This effect of board-level representation has also been found by Harju, Jäger, and Schoefer (2021), who show that it is associated with a 2% decline in layoffs compared to peers without board representation. However, they do not find any effect of workers' councils.

2. Wage Levels

In general, most studies find either no effect, or small positive effects on wage levels for employees working in more democratic firms.

Causal Mechanisms

The causal relation between firm democratisation and wage levels is intuitively quite simple: the more power and voice workers have in a firm's decision-making, the more they will perform rent-seeking and increase their wage by redistributing firm surplus (Wilkinson et al. 2020). This can subsequently be refined with two related mechanisms: (1) Worker voice enables 'insurance' or 'solidarity' mechanisms so that in times of crises firms decide to lower wages instead of laying off workers (Kim, Maug, and Schneider 2014), and (2) If worker voice leads to poorer firm performance due to slower decision-making or 'hold-up' mechanisms, then this lower performance could decrease wages in less prosperous firms (Jäger, Noy, and Schoefer 2021).

Empirical Results

I have found 15 relevant studies regarding the links between firm democratisation and wage levels, and they are all from this century, ranging from 2003 until 2021. Most studies are based in Germany and in Scandinavian countries like Norway and Finland. In general, most studies (which only look at workers' councils and board representation, there isn't research on collective ownership) find either no effect, or small positive effects on wage levels for employees working in more democratic firms. Some evidence does support the 'insurance mechanisms' whereby employee representation at the board level is associated with lower wage levels due to worker solidarity in case firms are in crisis.

Table 8 - Firm Democracy & Wage Levels - Main findings

		Societal Outcomes
		Wage Levels
Democratic Institutional Design	**Collective Ownership**	Unknown
	Board Representation	Not in normal times. In crises BLER has been shown to support solidarity between workers and collective wage decreases.
	Workers' Council	The presence of a positive wage effect is debated in the available literature. Most studies find a small or no positive association.

Collective Ownership

No studies have been found regarding this topic.

Board-Level Employee Representation

At the board-level, it does not appear that employee representation leads to any positive wage effects. In Norway this was studied by Blandhol, Mogstad, Nilsson, and Vestad (2020): they did not find any statistically significant effect. This corroborates results obtained by Harju, Jäger, and Schoefer (2021) in Finland, who observed a statistically insignificant increase in wage levels of 1.6% coming from board-level representation. Jäger, Schoefer, and Heining (2021) have found similar results in their study of the potential wage-effects of a new German reform in 1994 on board-level employee representation. They found statistically insignificant wage increases of 1.0% as a result of more employee representation on firm boards.

There is one particular instance in which board representation is associated with lower wages: when firms are in a situation of crisis. The only studies which identified a potential negative relationships between board-level representation and wage levels were performed by Gregorič and Rapp (2019) and Kim, Maug, and Schneider (2014). They showed that firm democratisation may limit crisis-induced layoffs, but at the cost of lower wages spread out on all the employees. As such, a form of solidarity has been recognised within firms in which workers have a bargaining power. The negative impact on wages observed as a result of these "solidarity mechanisms" decided by more democratic boards is actually positive for workers, otherwise they would not have voted for them.

Workers' councils

The effects of workers' councils on wage levels are quite mixed in the literature.

In 2003, the first empirical study on this topic was performed by Hubler and Jirjahn (2003b) on German manufacturing establishments. From the start their approach reflects the importance of the collective bargaining institutions at the time: they found that the presence of workers' councils has a positive effect on wages, but that this effect is more important when the establishments are not covered by industry-level collective bargaining regimes. A few years later Addison, Teixeira, and Zwick (2010) found similar results in their study using matched employer-employee data from the Germany for 2001 from the IAB (Institute for Employment Research). This positive relation remains true even when controlling for establishment- and worker heterogeneity, and appears to be higher for women, foreigners, east-German workers, and service workers. In the last few years there are a few studies which have supported these earlier findings (Jirjahn 2016 ; Jirjahn and Smith 2018; Hirsch and Mueller 2018; Schnabel 2020). These studies emphasise the small yet positive effects on wages and mild reductions in wage inequalities within firms. Most recently, in 2021, Jäger, Noy, and Schoefer (2021) have shown that workers' councils lead to moderately positive outcomes on wage levels of employees.

Nevertheless, such positive findings are mitigated by a variety of other studies both in Germany and other countries. For instance, Grund and Schmitt (2013), have shown that German employees who move to a firm with a workers' council do not necessarily receive a wage increase. Keskinen (2017) observed the same in Finland. The Norwegian studies by Blandhol et al. (2020) also did not find any statistically significant effect from workers' councils on wages. This corroborates results obtained by Harju, Jäger, and Schoefer (2021) in Finland, who observed no real effects from workers' councils.

3. Job Satisfaction

When considered as a broad 'umbrella term' which integrates various aspects related to worker satisfaction in their jobs, the results associated with firm democratisation are quite positive.

Causal Mechanisms

There are a variety of mechanisms developed by researchers regarding the effect of firm democratisation on job satisfaction. In general, they can all be put under the 'collective voice hypothesis': in democratic firms, since workers have more say on labour management practices, we should expect that the latter will be more aligned with worker preferences (Wilkinson et al. 2020). More specifically, there are four different more detailed categories which come under job satisfaction:

(1) *Occupational health & working conditions:* Firstly, and most importantly, when workers have more decision-making power, they will make sure that the labour conditions objectively improve on topics like occupational health & safety through workplace health promotion (Kaswan 2019). This can be assessed through voluntary quitting rates as a proxy of poor working conditions, and through objective analysis of working conditions. The former fits within the 'exit-voice' framework developed by

Hirschman (1970) and assumes that workers will quit their jobs in case the working conditions are too bad, and in case there are better alternatives.

(2) *Participation & Subjective Satisfaction:* Secondly, since workers have more job security through the lower layoff rates, and since they are more integrated in decision-making, we can expect subjective job satisfaction to increase. This would arise from the higher involvement of workers in their firm, and their higher capacity to project themselves within the firm they work in. In case workers participate financially in their firm, through cooperatives for example, we could also expect that this sense of responsibility and ownership should further enhance this trend. This is usually evaluated with subjective surveys which are sent around to workers (Harju, Jäger, and Schoefer 2021). The most famous format of such surveys ask participants to answer according to an ordinal scale from 'totally unhappy with the job' to 'totally happy'.

(3) *Wages & Material satisfaction:* Thirdly, the lower wage inequality and higher wages should very materially lead to higher job satisfaction. To confirm this hypothesis, we rely on two causal mechanisms: the first determines the relation between firm democracy and wage levels (or wage inequality): more democratic firms should lead to higher wage levels, and the second is the relation between wage levels and personal satisfaction: a person with a higher wage should be more satisfied with their job, et ceteris paribus. Though this former relation was not fully confirmed by existing literature, it is still both empirically and theoretically quite robust. The second relation has been shown multiple times (up to a certain point in time, and with diminishing marginal effects), and fits within the usual *'homo economicus'* model.

(4) *Continuous training & skills:* Finally, some authors have argued and noted that firm democratisation comes with a higher emphasis and habit of continuously training the workers, which satisfies workers since their skills increase, and managers since their workers are more skilled. This is assessed through subjective surveys, but also with more objective metrics measuring the time and resources that firms spend on their workers' training (Bellmann, Hübler, and Leber 2018).

Empirical Results

The empirical literature on the relationship between firm democracy and job satisfaction supports the positive hypothesis outlined above, though some mechanisms definitely require further research. In terms of occupational health and working conditions, democratisation has been widely associated with positive outcomes. Subjective job satisfaction also rises with worker participation and worker ownership. Though wage levels do not always increase with democratisation, they definitely lead to improved job satisfaction when they do happen. Finally, the little research that exists on training levels suggests that firm democratisation leads to positive results. These studies have been conducted on all three of collective ownership, board representation, and workers' councils, though definitely more on the latter.

Table 9 - Firm Democracy & Job Satisfaction - Main findings

		Societal Outcomes			
		Occupational health & working conditions	**Subjective satisfaction**	**Wages & Material satisfaction**	**Continuous training & skills**
Democratic Institutional Design	**Collective Ownership**	One study supporting a positive relationship.	Positive relationship though based on limited evidence.	Unknown	Unknown
	Board Representation	Appears to have mixed results on employee health, depending on how it is measured.	Positive relationship though based on limited evidence.	Unknown	Unknown
	Workers' Council	Very positive relationship between workers' councils and occupational health.	Positive relationship though based on limited evidence.	Unknown	Two studies suggest a positive relationship.

Though many studies are required to assess the confirmation of these four hypotheses, I have found 17 research papers which are particularly relevant on the relation between firm democratisation and job satisfaction, ranging from 2001 until 2021. These studies are mainly econometric and focused on Germany, Finland, Australia, the United States, the United Kingdom, and France, and quite a few case studies as well.

<u>Occupational health & working conditions</u>

The empirical literature appears to be widely converging towards the idea that firm democratisation at the establishment level through workers' councils comes with better workplace conditions and employee health, though the latter merits further research. The literature is divided on the effects of board representation, and there isn't much done on the effect of collective ownership.

Collective Ownership

Kaswan (2019) shows that such positive effects in terms of improved working conditions are particularly present among cooperatives.

Board-Level Employee Representation

The presence of employee representation at the board-level appears to have mixed results on employee health, depending on how it is measured. Jäger, Noy, and Schoefer (2021) studied the effects of the introduction of worker representation on firm boards in Finland in 1991. They find small positive effects on worker health, as well as on other factors. When assessed by the number of sick leaves, the effect of firm democratisation shows a different picture.[1] Indeed, Harju, Jäger, and Schoefer (2021) find no effects on the number of sick leaves in Finland as a result of board-level representation.

Workers' councils

In general, establishment-level democratisation appears to bring significantly positive effects on workers' health. Jäger, Noy, and Schoefer (2021) studied the effects of the introduction of workers' councils at the establishment level in 2008. They find small positive effects on worker health, as well as on other factors. In Australia, Wilkinson et al. (2018) found positive effects on workplace quality coming from the implementation of formal workplace employee voice using the Australian State of the Workplace Employment Relations Survey. They also do not find a difference in their results depending on the presence of unions in the firms considered. Most recently, and most extensively, last year Jirjahn, Mohrenweiser, and Smith (2021) assessed the extent to which market failures and organisational failures that tend to lead to suboptimal occupational health and safety can be tackled through firm democratisation. Their study based in Germany shows that workers' councils are associated with significantly more workplace health promotion compared to firms without. This remains the case even when we change factors such as the industry, type of ownership, and collective bargaining coverage.

[1] We must be careful regarding the significance we attach to the results related to sick leaves since their meaning could be contradictory: on one hand having fewer sick leaves can mean that workers are healthier, but on the other hand it can mean that they suddenly have the possibility to take care of their health and rest, which was potentially impossible in a very toxic and rigid working environment. The latter could mean that they work even when they are ill.

The only mitigating evidence regarding the positive effects of workers' councils comes from Harju, Jäger, and Schoefer (2021) and Arnold, Brändle, and Goerke (2018). The former observe no effects on the number of sick leaves in Finland as a result of workers' councils, and the latter even observe a higher sick leave in German firms which have established a workers' council.

Subjective Satisfaction

All types of democratic institutional design appear to lead to better subjective worker satisfaction, though the amount of available literature is quite limited.

Collective Ownership

Using a more case-study approach with 600 surveys sent among employees in three home aide facilities, Berry (2013) found positive results in worker-owned organisations compared to traditional firms. This effect of worker-ownership was also found by Castel, Lemoine, and Durand-Delvigne (2011) in their comparative interview-based study in which they show that workers' cooperatives reveal positive job satisfaction levels among employees.

Board-Level Employee Representation

Harju, Jäger, and Schoefer (2021) found that both board-level employee representation and workers' councils increased subjective job satisfaction within Finnish firms.

Workers' Councils

Using a representative sample of German employees from the German Socio-Economic Panel, Grund and Schmitt (2013) find that employees moving to firms with workers' councils report higher levels of job satisfaction, irrespectively of potential wage increases. This is particularly true for female employees. Even managers in Jirjahn (2016)'s study in Germany have supported the workers' councils thanks to their beneficial effects on worker engagement with their job. Workers' councils appear to foster trust and improve relations between employers and employees.

Wages & Material Satisfaction

The relationship between firm democratisation and wage levels was discussed previously. Its conclusions were generally ambiguous, though more favourable towards a positive effect. This provides a suggestive and not conclusive verdict regarding the first causal relation in this hypothesis.

The second relationship, between wage levels and happiness/satisfaction, is much more widely studied, and especially since the early 2000s. The first study on this topic was done by Clark (1999), using the first two waves of the British Household Panel Survey. He finds positive effect of wage increases on job satisfaction, though no significant effect of the absolute wage level. Subsequently, Grund and Sliwka (2001) showed that a rise in absolute wage levels leads to a rise in job satisfaction, using German Socio-Economic Panel on data from 1995. One study published in 2005 examined this topic across Europe with the European Community Household Panel Data from 1994 to 2001: Díaz-Serrano and Cabral Vieira (2005) have demonstrated that low paid workers report a lower level of job satisfaction compared to high paid workers.

The effects of wage changes on satisfaction are also affected by the human tendency to compare itself to one's peers. As such, Grund and Rubin (2017) have shown that relative wage increases for managers compared to their peers definitely lead to a positive effect on job satisfaction, when studied within the German chemical industry. Similarly, Card et al. (2012) show that workers with salaries below the median within their occupation unit report lower job satisfaction when they find out where they stand within the wage distribution, whereas above-median earners are unaffected by this information. This suggests that discrepancies within relative pay matter more than discrepancies in pay itself.

Though these relationships should be studied further to obtain more conclusive results, the current empirical relationship suggests that firm democratisation, through its wage-level improvements, can also increase job satisfaction among workers. Since we saw that these wage-level improvements, if they exist, only exist through the presence of workers' councils, we can suppose that material improvements in working conditions arising from higher wages when workers' councils are implemented may lead to higher satisfaction. However, the empirical grounding for such claims is quite shaky.

Continuous Training & Skills

The only study which directly assesses the effect of firm democratisation on the training level of employees was performed by Bellmann, Hübler, and Leber (2018). They found a positive, though weakly significant, effect on an individual level for employees within firms. Relatedly, Jirjahn (2016) found that manager's perceptions towards the importance of employee training change positively in firms with workers' councils.[2] Further research is therefore required to establish this relationship conclusively.

4. Gender Equality

The links between gender equality and firm democratisation are widely understudied. This means that I will also brush upon topics which have already been discussed, though this time the focus will entirely be on the intersection and effects linked to gender equality. Overall, we see that firm democratisation clearly has positive effects on job satisfaction among female workers, and probably also on the gender wage gap.

I expect the gender equality factor to actually play a role across all the dimensions that were addressed previously in this Part, though causal mechanisms are harder to pinpoint. The main reason why such dynamics have not been identified separately is probably simply the lack of research on the topic. Though collective ownership is not studied in relation to gender, we find that board representation is associated with lower gender pay gaps, and workers' councils lead to a decline in the gender pay gap, and higher job satisfaction among female workers.

Table 10 - Firm Democracy & Gender - Main findings

		Societal Outcomes
Democratic Institutional Design		**Gender Lens applied on other social outcomes**
	Collective Ownership	Unknown
	Board Representation	Board Representation is associated with lower gender pay gaps and higher firm efficiency.
	Workers' Council	Evidence suggests that the implementation of workers' councils leads to a decline in the gender pay gap, higher job satisfaction among female workers, and more family-friendly policies.

Collective Ownership

No studies have been found regarding this topic.

Board-Level Employee Representation

Quite a few studies have shown that wage inequality between women and men in firms is lower when there is board-level employee representation (Jirjahn 2011), regardless of the gender of

[2] Manager perception is not the same as effective training, though it still provides us with a helpful approximate indicator.

the employees on the boards. Huse, Nielsen, and Hagen (2009) attempt to push for a paradigm shift by emphasising that it is more important to ask how, rather than if, women and employee-elected board members contribute to declining gender inequality. The latter show, by studying Norwegian firms and surveying 840 board members in 2006, that increasing board-level employee representation not only leads to a reduction in wage inequality, but also to an improvement of firm efficiency.

Workers' Councils

The gender factors in relation with workers' councils has been studied regarding wage levels, job satisfaction, and firm-friendliness towards families. In effect, the evidence suggests that the implementation of workers' councils leads to a decline in the gender pay gap, and higher job satisfaction among female workers.

Gartner and Stephan (2005) find that the gender wage gap is smaller in firms which have a workers' councils. They explain these results by the general more equal wage distribution for workers in such firms, regardless of the gender. However, Grund and Schmitt (2013), when looking at a German representative sample of employees, do not find this positive association between workers' councils and women's wages. By contrast, they do find a positive association in terms of job satisfaction: female employees who move to a firm with a workers' council express a particular increase in their job satisfaction.

Jirjahn and Mohrenweiser (2019) looked at the implications of firm democratisation on gender equality through other factors related to work-family balance and equal opportunities policies. Using data of the IAB Establishment Panel, they find that the presence of a workers' council comes with a higher chance of family-friendly practices and the promotion of equal opportunities for men and women.

D. Environmental Performance

Firms in all sectors face increasing pressure to improve their environmental impact, be that through legislation such as emissions reductions or from consumers, activists and investors (Winston 2021; Castronuovo 2021). There is only limited literature assessing the links between firm democracy and environmental impac. There are, however, some promising initial empirical results from the four papers utilised in this section. They indicate that including workers within firm decision-making increases the consideration given to substantial environmental factors, pushing firms to take more action on climate-friendly practices.

1. Causal Mechanisms

Many thinkers have expressed strong opinions about the importance of firm democracy as a key factor for positive environmental performance. Favereau (2018) and Ferreras (2017) even made the claim that firm democracy is a necessary condition for an ecological transition of firms in the broader context of de-carbonising our economies and climate change. Within environmental performance there are a wide range of elements, such a greenhouse gas emissions, waste production, water use, etc., which have an impact on macro factors such as planet temperature, natural resource availability, and biodiversity loss.

The general argument behind Favereau (2018) and Ferreras (2017)'s statements can be traced back to the work of Polanyi (2001), who highlighted that a profit-maximising capitalistic system requires the instrumentalisation of labour and nature, and their transformation into marketable commodities. As such, firm democratisation would establish an institutional mechanism through which labour has (at least) equal decision-making rights as the capital, as a result of which planetary and societal considerations would gain much more importance in the strategic orientation of firms. This can come from a convergence of environmental interests with working conditions (e.g., if pollution levels come with poorer working conditions in terms of health. We can easily imagine that workers living around a factory would benefit from the reduction of waste production and water pollution), but also from a general interest of workers for broader objectives than the short-term investment return of shareholders.

2. Empirical Results

There have been quite a few studies examining the links between democracy and environmental performance at the state level (Polanyi 2001 ; Carayannis, Campbell, and Grigoroudis 2021 ; Kammerlander and Schulze 2021). However, the last few years we can see an emergence of empirical research analysing the relationship between these two important topics at the firm level. All democratic institutional designs seem to be strongly related to the environmental performance of firms, though much more research should be made to assess such dynamics.

Table 11 - Firm Democracy & Environmental Performance - Main findings

		Societal Outcomes
Democratic Institutional Design		**Environmental Performance**
	Collective Ownership	A comparative analysis has found that cooperatives are more conscious of their natural resources.
	Board Representation	One study suggests that more employee representation at the board level is strongly associated with substantive environmental policies.
	Workers' Council	One study in Germany finds strong relationships between the presence of workers' councils and environmental investments.

Collective Ownership

As early as 1995, Booth (1995) already assessed 7 comparative empirical studies between profit-maximising firms and cooperative enterprises in terms of their environmental practices. These studies were performed in the early 80s in the UK, the USA, Italy, and France. He notes that workers' cooperatives, in which employees have democratic participation rights in the government of the firm and also share surplus earnings, tend to use their natural resources more efficiently, leading to less resource extraction and environmental depletion, and are less growth oriented than traditional firms. This would support the claim that worker democracies support more sustainable economic and production practices, hence directly linking democratic changes to environmental outcomes. Though many will effectively criticise the smaller growth orientation of cooperative firms, this may potentially mean a more stable and long-term growth.

Board-Level Employee Representation

Most recently, and most importantly, Scholz and Vitols (2019) analysed the relationship between board-level codetermination and corporate social responsibility (CSR) in German firms. Though CSR is broader than only environmental aspects, it typically focuses on sustainability in the environment sense. They separate corporate social responsibility into two types of actions: 'symbolic' ones and 'substantive' ones. The former are considered as being rather cosmetic, and include actions like becoming a member of the UN Global Compact on sustainable and socially responsible policies of business. The latter are coming closer to the actual environmental impact which must be improved, and includes actions like setting targets for emissions reductions. Even though pledges can be quite cosmetic as they aren't binding, it is already a relevant first step to assess the relationship between firm democratisation and environmental impact. A neat methodological aspect of their study is that they make use of their Mitbestimmungsindex (MB-ix), through which they made a first sketch of a 'firm democracy index': they make a clear distinction between firms which have one-third employee board representation, firms with parity representation but with a casting vote for a shareholder-appointed chair, and firms with parity representation and a neutral chair. These distinctions reflect substantial differences in the power dynamics of firm government and are therefore very relevant. Without going into the details of their Mitbestimmungsindex, their findings are quite clear: the level of firm democracy is strongly associated with substantive environmental policies, though there is no significant relation with symbolic policies. Controlling for size, profit, sector, ownership dispersion, and time, this study presents a first tangible step towards necessary research linking social sustainability with environmental sustainability.

Workers' councils

Askildsen, Jirjahn, and Smith (2006) studied similar dynamics following the implementation and presence of workers' councils in firm establishments. Using German panel data, they find strong relationships between the presence of workers' councils and environmental investments. They explain this in a similar fashion: the presence of workers in local decision-making on topics such as local environmental protection will act as a counterweight to profit-maximising and cost-cutting in virtue of their higher vulnerability to the outcomes of firm actions.

E. Conclusion

Now that we have reviewed the literature assessing the links between firm democracy and notable societal outcomes, we are able to answer the two questions set out at the beginning of this part: whether available evidence supports the existence of a relationship, and which relationship exists between different democratic institutional designs of firms.

We can see that collective ownership is widely understudied compared to board representation and Workers' councils, though the literature still suggests that it may lead to better economic outcomes, higher job satisfaction, and a more conscious use of natural resources.

Board-level employee representation appears to increase worker productivity, but not necessarily wider economic outcomes and innovation. It also leads to fewer involuntary layoffs, solidary wage reductions in times of crisis to prevent layoffs, higher job satisfaction, and lower gender pay gaps. The effect of board representation on environmental performance, though based on one study only, suggests that it leads to stronger environmental policies.

Evidence on establishment-level democracy through workers' councils is particularly effective at rejecting the 'worker hold-up' argument, and supporting the information-sharing and long-term thinking hypotheses. Indeed, it is associated with better economic outcomes such as firm profits, productivity, and innovation. Workers' councils also strongly help job satisfaction and dismissal rates, though their effect on hiring and wages are debated. Understandably, environmental effects are limited (since such decisions tend to happen at a firm-level), though workers' councils are linked with higher environmental investments (at establishment level).

Table 12 - Part 1: Main empirical findings

		Societal Outcomes		
		Economic Performance	**Social Outcomes**	**Environmental Performance**
Democratic Institutional Design	**Collective Ownership**	Limited evidence supporting economic outcomes, though nothing found on productivity and innovation.	The only available evidence is limited and suggests positive job satisfaction.	A comparative analysis has found that cooperatives are more conscious of their natural resources.
	Board Representation	Available evidence suggests a positive relationship with worker productivity, but no agreement on strict economic outcomes and innovation.	Not enough evidence on hiring; agreement on fewer involuntary dismissals; only wage effects are solidary declines in case of crises; job satisfaction appears positive; and lower gender pay gaps.	One study suggests that more employee representation at the board level is strongly associated with substantive environmental policies.
	Workers' Council	Mostly positive relationships found with strict economic outcomes and productivity, and rejection of 'worker hold-up' argument on innovation.	Mixed results on hiring; agreement on fewer involuntary dismissals; positive wage effect is debated; job satisfaction is clearly positive; and higher female pay and job satisfaction.	One study in Germany finds strong relationships between the presence of workers' councils and environmental investments.

This Part has shown that firm democratisation generally does not lead to undesirable outcomes, as has been claimed numerous times. It has even been associated to strong positive results in terms of productivity, lower levels of involuntary worker layoffs, higher levels of job satisfaction, and the adoption of more environmentally policies.

It is therefore an essential reality of firms that scientific research should aim to better grasp through better measurement instruments. The current literature is very limited in its capacity to measure dynamics between democratic performance and other aspects of non-financial performance in virtue of the lack of measures to assess firm democracy. Except for the dichotomic presence of certain main institutional designs such as collective ownership, board representation, and workers’ councils, we do not have many tools to assess firm democracy. This highlights the need to build such research tools to improve our understanding of dynamics of firm multidimensional performance.

II. Part II: What and How Do We Currently Measure Firm Performance: Limits of the Current ESG Ratings

A. Introduction

In our quest to study firm democracy and its impacts on a variety of outcomes (both financial and non-financial), and after reviewing the results stemming from the scientific literature covered in Part I, we are now going to turn to the main instruments used by practitioners, and financial actors in particular, to measure the performance of firms on non-financial grounds. Most famously, the financial industry has been developing and using ESG ratings, as a tool to measure non-financial aspects of the firms they invest in. ESG ratings could fulfil two main research purposes: (1) Objective 1 - They could help measure the level of democratisation of firms, and (2) Objective 2 - They could also help measure the correlation between democratisation of firms and societal impacts of firms as outlined in Part I: economic, social, and environmental performance. In this part of the thesis I shall explain how they work, and perform a substantial assessment of their usefulness in measuring firm democracy and firm performance on the three categories of outcomes examined in Part I.

B. Overview of ESG Ratings

In light of their wide use to assess the performance of firms on extra-financial factors, we must perform an analysis of ESG ratings to evaluate their usefulness in assessing firm democracy. ESG ratings are scores awarded to firms related to their practices in terms of Environment, Social issues, and Governance (since we focus on firm democracy, we shall disregard the non-relevant parts of ESG ratings, hence mainly the environmental ones). These ratings have started emerging from the 1980s onwards as a variety of private rating agencies were born (Avetisyan and Hockerts 2017). What we typically claim to be their primary aim is to accurately capture a firm's performance on all relevant ESG topics. Following that idea, they enable the reduction of information asymmetry and incomplete information by providing a score of the firm's performance on specific ESG metrics such as carbon emissions, or gender equality (Christensen, Serafeim, and Sikochi 2019, 7). Only when the public, and more importantly investors, have access to such data, are they able to make sound consumption and investment decisions and hold companies accountable for their ESG performance (Kotsantonis and Serafeim 2019). "You cannot manage what you cannot measure" goes the saying. In that sense, we can only assess whether companies are making progress to have practices in line with planetary boundaries and true sustainability once we start measuring this progress according to relevant indicators. This should therefore bring more accountability towards companies to demonstrate how their policies, initiatives, and practices influence ESG outcomes (Grewal and Serafeim 2020). Given that they claim to cover the Social and Governance issues, we will here analyse to what extent these ESG ratings can help in assessing firm democracy (i.e., Objective 1) and other non-financial outcomes (i.e., Objective 2).

Among the plethora of ESG rating organisations and agencies currently crowding the field, seven stand out: S&P[3], MSCI, Sustainalytics[4], Refinitiv[5], ISS, Moody's[6], and Fitch. This market has gradually been undergoing both a significant concentration through the acquisition of agencies by large financial market players and diversification through the emergence of numerous start-ups offering alternative data sources (disclosure: one of them being Wequity, the start-up I founded in February 2021 whilst being a student at UCLouvain).

Their databases cover a wide range of companies worldwide, mainly listed ones, and mainly in western capital markets. Their main clients, forming around 60% of the market, are asset managers who use this data in order to perform ESG analyses on their portfolio companies and sell 'ESG funds', which supposedly only include companies that perform better on ESG topics compared to their peers (Cornell 2020). They are followed sell-side firms, forming around 20% of the market, direct asset owners (12%) and consultants (6%) (Cornell 2020). This ESG ratings market has been booming lately, with total revenues estimated at $617 million in 2019, and a growth rate close to 50% (Walter 2020).

To construct their ratings, these agencies use different types of data sources, such as annual reports, sustainability reports, company press releases, company websites, non-profit and academic reports, etc. They bring all this information together and categorise it into three main pillars: Environment (E), Social (S), and Governance (G). Companies typically get a score per

[3] Mainly following their acquisition of SAM.
[4] Owned by Morningstar.
[5] Previously called Thomson Reuters and now owned by the London Stock Exchange Group
[6] Following their acquisition of Vigeo Eiris.

pillar, as well as an overall score, which are both built through a weighing of the criteria depending on the company's industry. Within the 'Environmental' pillar we find factors such as carbon emissions, energy efficiency, waste management, and deforestation. The 'Social' pillar integrates factors such as workforce-related issues (e.g., accidents on the workplace, absenteeism, employee health), human rights, labour standards, product safety, income distribution. Finally, the 'Governance' pillar focuses on aspects relating to the governance of the firm being rated, such as board independence, shareholder's rights, manager's remuneration, control procedures, and the respect of the law (Billio et al. 2021).

The choice of metrics is typically made based on the widely used notion of 'financial materiality'. In a nutshell, this means that indicators should only be integrated within the ESG assessment of a company if they are shown to have a relative importance on the business model and activities of the company. This is usually done at an industry-level, so that indicators (and their weight within the scoring methodology) are the same across a given industry. For instance, it would make sense that we emphasise data security and respect for privacy when evaluating a software company such as Google, whereas the examination of a mining company requires further attention to labour conditions. Intuitively this approach ensures relevance and comparability. The former is achieved through the sector-dependent materiality whilst we obtain the latter by harmonising indicators across a given industry. The general idea is that poor labour conditions may lead to lower productivity, weak environmental actions may expose a firm to legal action and/or regulatory penalties, and unclear governance rules could increase the chance of unethical practices related to disclosure, fraud, and pay (Boffo and Patalano 2020).

C. Evaluation of the usefulness of ESG Ratings to assess firm democracy

We can assess the usefulness of ESG ratings in light of the objectives we set ourselves at the start of this thesis. This means that we look at them as a tool potentially contributing to assess the level of democratising of firms and firm performance on other non-financial dimensions such as environmental and social outcomes. My evaluation will show that ESG ratings can be a source for inspiration for (1) the format of firms' non-financial performance assessment frameworks, and (2) certain indicators related to firm democracy and ESG matters. ESG ratings, in their current format and use, show substantial weaknesses which prevent us from taking them as a whole as a serious tool for both objectives: assessing firm democracy and other non-financial aspects. This is mainly due to their telos being misaligned with the aims of assessing companies' non-financial performance: ESG ratings are about non-financial risks which have a material financial impact on the company's economic value, and not the other way around.

1. ESG ratings have a few important strengths

ESG ratings can provide three main contributions towards the assessment of firm democracy and other non-financial aspects. Firstly, from a methodological standpoint, if we need a specific measurement instrument of firm democracy, we could draw many learnings from ESG ratings in terms of methods to build ratings based on a wide number of non-financial indicators. Secondly, they include a wide range of indicators related to social and governance topics, which is a first step to measure progress on firm democratisation, and environmental & social impact (i.e., our two research objectives). For instance, some of the ESG ratings include a measure of pay gap across company hierarchical levels, and also of board independence. Thirdly, more pragmatically, their use and implementation have started making companies used to measuring and reporting performance on societal outcomes.

2. ESG ratings have substantial weaknesses

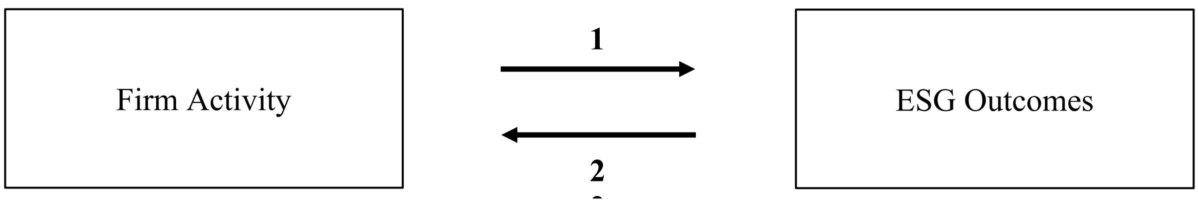
There are too many reasons which mean that we cannot and should not adopt ESG Ratings in their current form in order to perform an assessment of firm democracy and other dimensions. I shall expand the five main weaknesses which I have gathered within the literature and my own analysis on ESG ratings.

a) Weakness 1: ESG Ratings are not made to assess a company's ESG performance

Firstly, and quite surprisingly, ESG Ratings are not designed to be an assessment of a firm's ESG performance, but rather an assessment of the seriousness of ESG risks on a firm's valuation. In reality, ESG risks are about non-financial risks which have a financial material risk on the company's economic value, and not the other way around! As such, since they are made to assess how ESG factors can affect a firm's value, by design they are not relevant to assess a firm's Environmental, Social and Governance performance per se (or sometimes only indirectly when they measure certain indicators such as board diversity, pay gap policies, etc.), and therefore even less to assess firm democratisation.

Since the ESG rating agencies have asset managers as main clients, and since asset managers have a fiduciary responsibility to ensure the highest returns to their clients the asset owners, we can quite easily infer that ESG ratings in their current setup are made and used by people who do not share the aims of assessing firm performance on environmental, social, and governance outcomes for their own sake. A recent statement by the US Department of Labour illustrates this conclusion bluntly: “fiduciaries may not sacrifice returns or assume greater risks to promote collateral environmental, social, or governance (ESG) policy goals when making investment decisions” (Doyle 2018, 6). This highlights that investors are legally obliged to look at financial returns and are not allowed to give precedence to other considerations. As such, ESG in today’s form and in its aims is a tool to mitigate risks, and not a tool to evaluate the performance of firms on ESG topics.

We can illustrate what this means with the following graph. In effect, though intuitively they may claim the opposite, ESG ratings are used in order to assess the impact of the ESG factors on a company’s capacity bottom line (i.e., arrow 2) instead of assessing the impact of the company on ESG factors (i.e., arrow 1).



This was recently famously argued by (Fancy 2021), ex-Chief Investment Officer of Sustainable Investments at BlackRock. He denounced the contradictions of BlackRock’s CEO Larry Fink who has been making very public claims about BlackRock’s commitment to sustainability. In effect, the world’s largest asset manager, with 10 trillion USD in assets under management in January 2022, though it sells ‘green investments’ is only selling more financially astute investment products without a real care for the ESG impact of the companies they invest in. This was made particularly explicit recently during the latest ‘season’ of Annual General Meetings of shareholders of firms, during which Blackrock voted against numerous climate resolutions which were increasing the climate ambitions the relevant firms. This was explained by BlackRock as follows: "We do not consider them to be consistent with our clients' long-term financial interests," the company wrote (Masters 2022).

As a consequence of this design, they fail to fulfil their two research objectives: since they integrate only "financially material elements", they will necessarily omit a wide range of indicators related to (1) firm democracy and (2) wider societal outcomes, since both may not (today) be directly related to financial materiality. If we really aim to assess firm democratisation and firm performance on wider non-financial dimensions, we must go beyond the use of financial risk-focused measurement tools.

b) Weakness 2: The distinction between S & G leads to intersectional 'potholes'

The distinction between 'S' and 'G' prevents us from assessing a number of relevant aspects related to firm democracy, hence mitigating the ability to achieve objective 1. It is a methodological feature which by nature prevents a core tenet of firm democracy: the distinction between the 'S' and the 'G' trickles down into a distinction between employees on one side, whose matters are dealt with in the 'S' and shareholders and management on the other side, whose matters are dealt with in the 'G'. The concept of employees as shareholders and/or decision-makers, which is a critical element of democratic government of firms, is inexistent. As such, this current methodological approach of ESG ratings would not be adequate in measuring firm democracy.[7]

If we want to use ESG ratings to assess firm democracy and the extent to which workers are involved in the power distribution and decision-making, then we must rethink the boundary between the 'S' and the 'G'. Instead, we should probably merge them into one holistic pillar which reflects social and governance aspects within the same umbrella.

c) Weakness 3: ESG Ratings are opaque

There is a lack of transparency from ESG Ratings agencies in their methodology to assess firm performance on individual ESG indicators, mitigating the reliability/repeatability (cf.

[7] We were actually already warned of the dangers of such theoretical and methodological blind spots arising at the intersection of categories by Crenshaw (1989). She coined the term 'intersectionality' to accentuate the unique experience lived by black women in terms of their double oppression which cannot be theoretically analysed by only considering them as 'black' or only as 'women'.

definition below in Part II) of the instrument. The agencies do not offer a clear picture about the criteria used and the assessment process adopted. The extent of this opacity has been greatly documented by Douglas, Van Holt, and Whelan (2017), who reviewed 17 ESG rating provider's methodologies and documented their lack of transparency related to the choice and weight of indicators. As such, it is often not possible for an external person (like me) to use the frameworks and apply them to any firm I would like to make an ESG assessment on. In order to do so, I would need to be actively supported by an ESG Analyst at the relevant ESG Rating Agency to understand how they make their judgement calls and score companies. This reduces the usefulness of the rating as a measure of firm democratic progress and firm environmental & social impact.

d) Weakness 4: ESG Ratings are too divergent to be robust

A substantial issue that remains with ESG Ratings is their divergence. This has widely been documented: in simple terms it just leads to situations in which a given company may receive a significantly different score from different rating agencies.

There are a number of studies which have documented this divergence (Billio et al. 2021; Berg, Kölbel, and Rigobon 2019; Olmedo, Torres, and Izquierdo 2010; Halbritter and Dorfleitner 2015; Chatterji et al. 2016). This divergence can be shown in multiple ways:

The most robust and significant method is to measure the correlation between the firms' scores awarded by the different ratings. Most studies assessing the correlation between the various ESG ratings show quite bleak results. Recently Billio et al. (2021) studied the scores awarded by Refinitiv, MSCI, RobecoSAM and Sustainalytics to a sample of 1049 companies listed in the MSCI World Index. They found that the correlation between ESG ratings is only 0.58 on average, and ranges from 0.43 (Refinitiv & MSCI) to 0.69 (Refinitiv & RobecoSAM). Before them, in 2019, Berg, Kölbel, and Rigobon (2019) found that correlations between 6 ESG ratings (KLD, Sustainalytics, Moody's ESG (previously Vigeo-Eiris), S&P Global (previously RobecoSAM), Refinitiv (previously Asset4), and MSCI) range from 0.38 to 0.71. They studied a sample of 823 firms in 2014 and obtained an average correlation coefficient of 0.61. Even worse news for firm democracy is that of the three pillars, the lowest average correlations were found in the 'G' domain (0.38). In 2015, Halbritter and Dorfleitner (2015) studied the correlation between Refinitiv, MSCI, and Bloomberg. They obtained correlation coefficients for individual environmental, social, governance as well as aggregate ESG scores ranging between 0.05 and 0.62.

Billio et al. (2021) went beyond the correlation coefficients to document the divergence. They also computed the 'percentage of agreement' of the ESG ratingsn defined as the proportion of firms in their sample for which the ESG rating is the same (once the scores are standardised). On average, they find that this percentage is around 24%, and ranges between 19% (RobecoSAM & MSCI) until 28% (Sustainalytics & RobecoSAM), thus further confirming the differences between ESG Ratings.

A third metric used to assess the divergence is the coefficient of determination, denoted R^2, of the different ESG Ratings. Statistically, this R^2 corresponds to the proportion of the variation in the dependent variable that is predictable from the independent variable. State Street Global Advisors found that the R^2 between the ratings of Sustainalytics and MSCI, MSCI and RobecoSAM, and MSCI and Bloomberg were around 0.5 (Boffo and Patalano 2020).

Figure 1 - Assessment of R^2 of ESG Ratings among major score providers

	Sustainalytics	MSCI	RobecoSAM	Bloomberg ESG
Sustainalytics	1	.53	.76	.66
MSCI		1	.48	.47
RobecoSAM			1	.68
Bloomberg ESG				1

Source: State Street Global Advisors (2019)

To make the realisation of these discrepancies tangible, the easiest is to take a few companies and dive into the details. Billio et al. (2021) have done this for four firms: Verizon Communications Inc., Nissan MotorCo., Ltd, Oracle Corp. JPN, and Goodman Group. They performed this analysis with the same four ESG rating agencies: Refinitiv (0-100), MSCI (ranging from CCC to AAA), RobecoSAM (0-100) and Sustainalytics (0-100). The table below shows the how different the scores are between ESG ratings:

Figure 2 - Example of divergence in ESG ratings

Company	Sustainalytics	RobecoSAM	Refinitiv	MSCI
Nissan Motor Co., Ltd	6	77	72	CCC
Verizon Communications Inc.	91	20	67	BB
Oracle Corp. Jpn	78	8	63	BB
Goodman Group	86	21	58	AA

The case of Nissan is quite telling: whilst Sustainalytics and MSCI assign a very low rating, RobecoSAM and Refinitiv did rather the opposite. Billio et al. (2021) explain this by noting that the former two rating agencies focus more on the managerial perspective in comparison to the latter which give a higher weight to the environmental dimension.

An obvious question then emerges: where is this divergence from? There has been ample research on this question, and the answer is "a combination of a (1) theorisation problem and a (2) commensurability problem."

The theorisation problem refers to the different views that rating agencies hold with regards to the framework used to assess a company's ESG performance. Billio et al. (2021) for example have shown that there is a lack of commonality in the definition of ESG methodologies used by rating agencies. This means, for example, that rating agency A may decide that gender equality should be included in a social assessment of a company, whilst rating agency B does not include it. Berg, Kölbel, and Rigobon (2019) have estimated that theorisation leads to 38% of the problem. Chatterji et al. (2016) studied the extent of the theorisation problem and showed that the lack of common theorisation comes from (1) A difference in the high-level categories (E,S,G) measured by the raters, (2) Some industries being screened out by certain rating agencies, and (3) the normalisation of the ratings by industry (i.e. such that a firm is compared to the other firms in its own sector) implemented by some raters. This first cause is notably corroborated by Halbritter and Dorfleitner (2015) who noted that animal testing is only included by Refinitiv, whereas firm compliance with environmental regulations is only integrated by Bloomberg and KLD. Boffo and Patalano (2020) note that there is a key difference in the extent to which the ESG ratings measure 'controversies', which are events which cause reputational damage.The third cause is related to the practice of benchmarking which requires the choice of a peer group. The opaque approach used by ESG raters about peer group components has created wide inconsistencies and undermines their credibility.

Whereas the theorisation problem was related to the components included by ESG raters, commensurability refers to the way raters measure the same components. The commensurability problem arises when ESG rating agencies adopt different methods to measure the same ESG factors. According to Berg, Kölbel, and Rigobon (2019), the commensurability discrepancy contributes to 56% of the rating divergence. This can be due to a number of different reasons. Firstly, raters may decide to use slightly different (and a different number of) indicators to assess the same general ESG factor. For instance, Dorfleitner et al. (2015) showed that, though the three ratings they studied broadly cover the same aspects within the social pillar, the number of indicators they used to measure factors related to health and safety differed significantly. Boffo and Patalano (2020) for example show that MSCI has ten categories that include key environmental and social externalities, risks and opportunities, followed by 37 subcategories that focus on specific aspects and give way to one or more indicators. Similarly, Sustainalytics has more than 42 subcategories which cover very related ESG factors. By contrast, Refinitiv only has 10 categories which are divided into 186 metrics and more than 400 data points. Secondly, the weights awarded to different ESG indicators lead to discrepancies in the final results due to the different importance that the rating agencies put on different factors. Thirdly, there is a significant part of the score which is made by the qualitative judgement of the ESG rating agencies' experts. Most of the rating firms openly state that they integrate their industry knowledge to assess the ESG performance of firms. As such, as in most social sciences, since experts have varying opinions, this will lead to varying judgements and ratings. Fourthly, an important part of the measurement differences comes from the different choice of data sources to assess ESG factors. ESG rating agencies have mainly been using publicly disclosed information found in annual reports, but many also make use of ESG questionnaires they send to companies, NGO reports, and news outlets. Finally, since there are many data gaps covering many companies and time periods for a variety of ESG metrics which raters have to deal with, their differing data-inputation methods also contribute to further widening the rating divergence (Kotsantonis and Serafeim 2019).

Both the theorisation and commensurability problem should gradually disappear as regulations standardise the ESG disclosure for companies, as we have been seeing with the US SEC's latest announcement (U.S. Securities and Exchange Commission 2022)and the European Corporate Sustainability Reporting Directive (EU Commission n.d.) imposing and clarifying mandatory non-financial reporting obligations for firms.

In general, a divergence in the ratings makes the ESG evaluation of firms very difficult since there is no single source of truth. The scale of this problem depends on the scale of the divergence. Since the divergence is still very high, we can simply infer that the problem is very big.

Zooming out of the details of this divergence problem in the ESG sector, we must also mention that the desirability of a single ESG rating (i.e., zero divergence) is actually quite controversial. Indeed, having a single source of truth materialised via a single ESG rating would implicitly contain significant value-judgements due to the methodological choices made in the scoring-construction. More important is rather the transparency of corporate performance on relevant indicators which can be tracked and followed individually, and which is being pushed by initiatives such as the EU Taxonomy which aims to standardise the vocabulary of environmental metrics (EU Commission n.d.).

e) Weakness 5: ESG Ratings are biased in several dimensions

A final issue with ESG ratings comes from the biases that researchers have identified within the raters' methodologies. I shall touch upon the most important ones: firm size, disclosure, geography, and industry.

(1) Firm Size Bias

The most famous bias in ESG ratings is related to firm size. It has been widely documented and is based on the following hypothesis: larger firms have more resources to document and communicate/report about their ESG initiatives in a positive way. It therefore is not necessarily due to large companies actually performing better on ESG factors. This was first identified by Doyle (2018), using an analysis of over 4,000 Sustainalytics ESG ratings. They showed that larger companies generally obtain better ESG ratings. Doyle (2018) providse a telling example to illustrate this finding:

(p.10) "Take for example the Bristol-Myers Squibb Company, a pharmaceuticals company with an $83 billion market capitalization. It has a Sustainalytics ratings score of 73, which is 20 points better than the healthcare industry average and 25 points above the overall Sustainalytics average. As a large cap company, Bristol-Myers implements GRI Sustainability Reporting Standards and has established high-profile ESG goals. Despite ambitious ESG aspirations, disclosures, and corresponding high ESG ratings, the company has been tied to recent high-profile controversies including questionable experimental testing methods and Foreign Corrupt Practices Act violations. These are the types of factors that should have a substantial downward impact on ESG ratings, but in this case, there appears to be little correlation." (Doyle 2018)

These results have been corroborated by Kotsantonis and Serafeim (2019), Boubaker, Cumming, and Nguyen (2018), Yongjun Tang, Yan, and Yao (2021) , and Drempetic, Klein, and Zwergel (2020). The latter find a significant positive correlation between a company's available resources for providing ESG data and the availability of a company's ESG data with its ESG rating. At the same time, they did not find that these better ESG ratings correlated with performance on specific ESG indicators like GhG emissions. This thus indicates that the ESG ratings do not realistically measure the actual sustainability performance of companies, and are significantly biased by the firms' capacity to provide ESG data. Drempetic, Klein, and Zwergel (2020) provide a rather cynical conclusion: "it may be better for companies to invest in sustainability reporting, rather than in sustainability activities or impact".

(2) Disclosure Bias

Interestingly, the previous bias appears to be mitigated by the results of studies which find a positive correlation between the level of disclosure and the level of rating divergence. Christensen, Serafeim, and Sikochi (2019) explain this through the subjective nature of ESG information: more disclosure increases the opportunities to interpret and assess the ESG information differently. The conventional wisdom suggesting that higher disclosure would be associated with more rating convergence due to a lower information asymmetry is not yet really applicable for ESG ratings.

To assess this phenomenon, Christensen, Serafeim, and Sikochi (2019) used 30,700 firm-year observations on 5,637 firms between 2004 and 2016. Using firm fixed-effects and using a difference-in-difference design with mandatory ESG shocks, the authors have found strong support for their hypothesis. When ESG disclosure increases by one standard deviation, ESG score divergence increases by 1.41, whilst the average ESG score divergence in their sample is 12.32.

(3) Geographical Bias

The legal environment surrounding the operations of a company has also been identified as meaningful in understanding variations in ESG ratings (Gyönyörová, Stachoň, and Stašek 2021; Boubaker, Cumming, and Nguyen 2018; Frías-Aceituno, Rodríguez-Ariza, and García-Sánchez 2013; Barbu et al. 2014; and Liang and Renneboog 2020). The main causal mechanism is the following: certain jurisdictions have more requirements regarding ESG disclosure for firms, leading to geographical differences in the availability of ESG data between firms. For instance, Doyle (2018) noted that in the European Union, firms with more than 500 employees must publish an annual non-financial statement as well as some disclosures surrounding their diversity policy. By contrast, in the USA, such requirements are inexistent. Doyle (2018) has found that companies domiciled in Europe often receive much higher ESG ratings than their peers in the United States, confirming the geographical / legal cause for this. This is also due to the fact that investors in Europe are more compelled to pay attention to ESG: in 2016 Schroders performed a study in which 58% of European fund managers stated that they viewed ESG as an important investment consideration, whilst only 14% of their North American counterparts had the same opinion. Doyle (2018) provides a very illustrative example of this geographical bias by delving in to a comparison of BMW Group and Tesla:

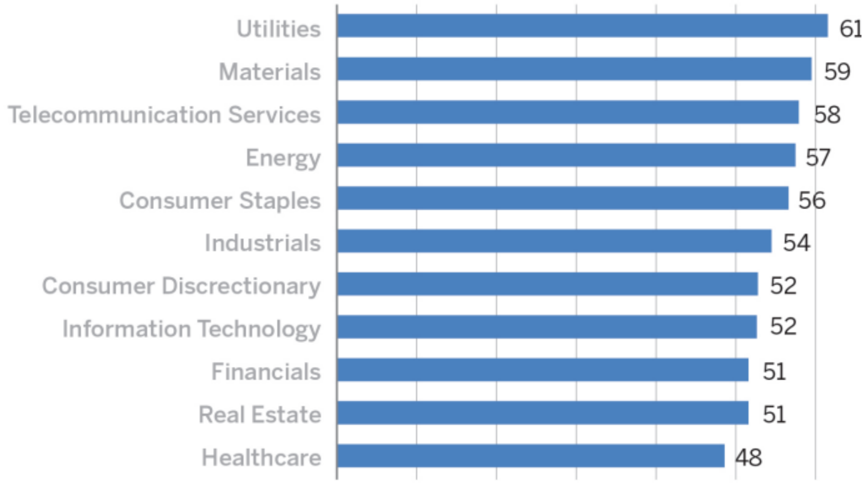
« BMW has a high rating (93rd percentile) despite a slew of controversies, including anti-competitive practices, illegal marketing practices, business ethics violations relating to intellectual property, employee and human rights violations along their supply chain, and even animal rights violations. The company is facing accusations of collusion with Volkswagen, Audi, Porsche, and Daimler on various technological issues and systems to evade environmental and safety regulations.

In contrast, Tesla (38th percentile) is below every single European auto manufacturer, including the companies named in the collusion accusations above. Most notably, Tesla's score even lags Volkswagen, which as previously discussed has been implicated in a major environmental violation. Meanwhile, Tesla is the world leader in technology to reduce carbon emissions from automobiles. »

(4) Industry Bias

Since most ESG rating agencies normalise the ESG scores per industry, company-specific poorer performances are sometimes hidden by the industry harmonisation. Though it makes sense to standardise the scores and weights within the same industry in order to enable more comparability and relevance of the ESG scores, there is a trade-off which must be openly taken into account. On top of this, we also see that ESG Rating agencies on average assign different ESG scores to companies based on their industry. Doyle (2018) showed that Sustainalytics on average awards the utilities an ESG rating of 61.3/100, whilst the healthcare industry on average obtains 49/100.

Figure 3 - Average ESG Score by Industry



D. Conclusion

ESG ratings are relevant as measurement of (1) governance of firms, which can provide useful learnings to build a firm democracy index, and (2) the societal performance of firms. However, they also have serious weaknesses: they are made to identify material financial risks but not to measure real firm performance on social and environmental issues; they are significantly divergent among rating agencies, and this divergence is confounded by a substantial level of opacity relating to many aspects of the ratings; they tend to contain important biases. This creates a clear demand and space to develop a firm democracy index in order to assess the evolution of firms' democratisation efforts and to enable a better evaluation of links between firm democracy and wider societal outcomes on environmental and social aspects.

III. Part III: Building a Firm Democracy Performance Index: A First Attempt

A. Introduction

The first two parts of this thesis enabled us to gain a deeper understanding of the empirical relevance of assessing the dimensions of firm democracy, as well as the clear limitations of ESG ratings in assessing both firm democracy and any progress of firms on non-financial issues.

We are thus faced with a challenge: to develop a better assessment of firm democracy in order to measure its progress along its various relevant aspects, and their impact on the multiple dimensions of a firm's performance.[8] This is a challenge that goes beyond any work a masters' student could achieve.[9] Nevertheless, I want to take the opportunity to contribute to addressing the challenge by outlining a few key dimensions of such an Index in an exploratory fashion. From a methodological standpoint, I know that this goal will require lots of iterations within the academic community and between the academic community and the business actors (firms, investors, management, shareholders, trade unions, etc.) before we obtain a satisfying model.

The aim of this third part is to offer a tentative, first sketch of what a simple and flexible tool of firm democracy measurement could look like. If we care for an evolutionary perspective capable to account for the democratisation of the workplace, it seems reasonable to argue that we should be able to measure (1) how one firm has improved or declined in its democratisation, and (2) whether firm A is more democratic compared to firm B. Achieving a perfect score on firm democracy may not be desirable for many people, but having a tool to assess the level of democratisation of a firm may be helpful to guide an analysis and efforts to change workplace democracy within our mainstream firms. It is also worth noting that the day the weaknesses of ESG ratings are addressed, and they become helpful to measure firm performance on ESG-

[8] Implicit in this line of reasoning are the assumptions that (1) we can accurately measure what matters (even though we do not have a theory for a number of outcomes and these are very complex issues), (2) Firm Democracy performance is reducible to manageable indicators.
[9] To give some perspective, the construction of the EU Taxonomy, aimed at categorizing firm activities across a scale of 'greenness' based on their impact on climate change, was led by a team of 35 experts for 2 years. (European Commission n.d.)

dimensions, this could enable us to perform robust analyses on the impact of firm democratisation on all these dimensions.

To take on such a task, I have followed a gradual approach whereby each section builds on the previous one. Section B will clarify the answer to an obvious question ‘Who is the Demos?’ by covering stakeholder theory and showing the importance of shareholders and workers in virtue of their investment and risk exposure to the firm. Section C gives a general definition of firm democracy. This phase can also be named the ‘conceptualisation’ phase, which Bhattacherjee (2012, p.43) defined as “the mental process by which fuzzy and imprecise constructs (concepts) (…) are defined in concrete and precise terms.” In section D, I will subsequently enter the ‘operationalisation’ phase, which is the process of developing indicators or items for measuring these constructs. I will suggest a firm democracy index based on 14 indicators on which the level of worker participation through information, consultation, or decision-making is evaluated. I use section E to very openly assess whether this index is helpful. I will conclude by showing that the Index that I have developed is flexible and transparent, but more research is needed to better assess its reliability and applicability.

B. Democracy: Who constitutes the Demos?

When engaging in a discussion on firm democracy it is crucial to clarify who is the demos of such a democracy (i.e., who is included in the decision-making process). While the purpose of this work is not to provide an exhaustive overview of all possible forms of-and rationales behind firm democracy, I aim to clarify which actors should be included within the power-sharing. I shall argue that the demos of a firm should be constituted by shareholders and workers in light of the particular investment and risk exposure that their engagement with firms present.[10] The latter should not include all workers in a firm, but rather the ones with a minimum contract of 1 year.

Traditional capitalist firms: only shareholders should make decisions

According to the most traditional view of firms, attempts to define a ‘demos’ are meaningless, since firms are not political entities but rather a mere bundle of contracts. This view is shared

[10] This does not necessarily mean political equality among shareholders and/or among workers.

among a wide range of corporate governance legal scholars, and has intellectual foundations in the notable work of Coase (1937) with his seminal paper 'The Nature of the Firm', Alchian and Demsetz (1972), and Jensen and Meckling (1976). The latter defined firms as follows:

"legal fictions which serves as a nexus for contracting relationships and which is also characterised by the existence of divisible residual claims on the assets and cash flows of the organisation which can generally be sold without permission of the other contracting individuals." (p.311).

If we adopt this view of a firm, they say,

"it makes little or no sense to try to distinguish those things which are 'inside' the firm (or any other organisation) from those things that are 'outside' of it. There is in a very real sense only a multitude of complex relationships (i.e., contracts) between the legal fiction (the firm) and the owners of labour, material and capital inputs and the consumers of output." (p.311).

Only shareholders and owners of the firm should make decisions in virtue of property rights. As such, we could infer that the demos should be constituted by shareholders only.

Jensen and Meckling (1976) across their paper also mention that the combination of property rights, investment-making, and risk-taking, provide the shareholders with the rights to own and control firms. Let's delve a bit deeper into the latter two elements. The first criteria is the concept of investment, and can generally be associated with three ideas (Clerc 2019):

- A contribution which can be an asset (material or immaterial), or work (i.e., time, effort, personal investment, etc.) provided by the workers.
- A risk of devaluation (or opportunity of value increase).
- A return on the investment made: this must be compared with returns which could have been made otherwise (i.e., opportunity costs).

We can analyse the investments made by shareholders below:

Table 13 – Analysis of investments made by shareholders

	Investment in capital
Contribution	Material or immaterial asset
Risk of devaluation	Value of assets and shares can decrease or disappear
Return on investment	Return measured through the inclusion of increase/decrease in the value of the asset, as well as the regular distribution of dividends.

This risk can be detailed with three main aspects: the nature of the risk, the temporality of the risk, and the possibility of risk-control. We can summarise the risks taken by shareholders below (Clerc 2019):

Table 14 - Analysis of the risk for shareholders

	Capital
Nature of the risk	Financial risk: loss of capital and revenue, opportunity cost of better investments.
Temporality of the risk	*Risk at the moment of choosing the firm (investment):* - Enlightened choice: standardised accounting information, contractual guarantees, control by a public authority (FSMA, AMF, SEC, …) on information quality. - Free choice: large choice of investment possibilities ; simultaneous evaluation of investment possibilities is possible; lack of urgency.
	Risk at the moment of leaving the firm (divestment): Quick resolution; quick reinvestment; reversibility; no limit in selling/buying.
Possibility of controlling the risk	*Economic control* Possibility to divide/diversify the risk (investment in multiple firms); liquidity benefits; possibility of specialisation of each firm.
	Legal control Decision rights: nomination and removal of board administrators, mergers, dividends, etc.

Since shareholders have invested their capital to hire employees and managers, and to buy equipment and raw materials, they are 'residual claimants' to the firm. After the claims of factors of production are satisfied, shareholders obtain the remaining profits. They are also the ones who take the risk of losing the amount of their investment (and only that amount, thanks to limited liability), which means that they should control the firm and its main decisions.

<u>Two objections to the shareholder-only view</u>

Without wanting to enter a debate on the reasoning behind firm democracy, I must bring forward the two strong objections to these traditional views which challenge the shareholder-only approach to the firm demos.

Objection 1: Ownership and property are complex concepts and do not necessarily include possession, control, and residual benefits.

Landemore and Ferreras (2016) explain why we cannot simply apply the concept of ownership to firms. I shall attempt to summarise their reasoning here:

Despite the language we typically use, firms are not just an object that can be owned by someone or a group of people. In their own words (p.9): "the firm (…) exists above and beyond the mere sum of physical assets and legal rights that partly define it". The concept of ownership and property is very intuitive and easy to define for physical objects: it typically refers to a bundle of rights of possession, of control, and to receive benefits from the assets, as defined in relation to other people. As such, if I own a bike, it is in my possession, I control what happens with it, and if I decide to rent it out to someone else, I will benefit from the returns of this transaction. However, this bundling of rights and responsibilities is a matter of legal and social convention. Following from this, one could imagine a world in which ownership in firms is unbundled so that the rights of control are separate from the rights of benefits and ownership. If this is the case, even though shareholders remain the sole residual claimants, control could be shared with more actors within the firm, or investors of different kinds.

Objection 2: shareholders are not the only ones making investments and taking risks.

A closer analysis here will justify that, next to the traditionally considered shareholders, there are other actors who should be included in the decision-making: workers. This analysis will be based on the original two criteria mentioned by Jensen and Meckling (1976): by engaging with a firm, who (1) makes an investment and (2) takes risks. Though they had probably only considered investments in capital and risks from the loss of capital, the work of Blair (1998), Ferreras (2017) and Clerc (2019) has broadened the scope of these concepts to include different types of investments and different types of risks.

We can outline the investments made by shareholders and workers as follows:

Table 15 - Comparison of the investment by shareholders and workers

Comparison of the investment by shareholders and workers		
	Investment in capital	Investment in labour
Contribution	Material or immaterial asset	Mental and physical investment measured in time and effort.
Risk of devaluation	Value of assets and shares can decrease or disappear	Evolution of physical capacities and cognitive abilities (skills).
Return on investment	Return measured through the inclusion of increase/decrease in the value of the asset, as well as	Actualised sum of remuneration received by the worker during the total period of employment, recognition and expressivity (or absence).

	the regular distribution of dividends.	

Though the investments made by shareholders are quite well-understood and well-known, it is much less the case for the investments made by workers. We should not underestimate the time and effort workers put in firms, which can at times really take the form of sweat and tears due to the personal nature of the investment. Their investment risk is also of a dual nature: intrinsic and inevitable due to ageing (though this ageing can be accelerated/slowed down), and extrinsic due to decisions made by the firm. Their return on investment is also quite volatile since their remuneration depends on many factors like economic outlook, labour laws, recruiting cycles, contract strength, career perspectives offered by the firm, etc. As such, both shareholders and workers are investors in capital and labour in virtue of their relations with the firm. They are similar in the sense that they cannot complete contracts which anticipate all the risks they take through adequate guarantees, i.e., they form 'incomplete contracts'. The main difference is that financial lenders, by integrating 'covenants' and 'guarantees' on their assets can get closer to complete contracts.

The second criteria to distinguish between stakeholders is the risk taken by the worker and shareholder by collaborating with the firm. Clerc (2019) very clearly outlines these aspects for both the shareholder and the worker (translation mine):

Table 16 - Comparison of the risk for shareholders and workers

Comparison of the risk for shareholders and workers		
	Capital	Labour
Nature of the risk	Financial risk: loss of capital and revenue, opportunity cost of better investments.	- Financial risk: opportunity cost of better revenues. - Physical risk: work-related injuries. - Skills risk: reduction or stagnation through the lack of use; opportunity cost of gaining more skills through education or other jobs. - Risk on specific investments lost in case of job changes. - Risk of time use: loss of a fraction of one's life (with a potentially different effect depending on age).
Temporality of the risk	*Risk at the moment of choosing the firm (investment):* - Enlightened choice: standardised accounting information, contractual	*Risk at the moment of choosing the firm (hiring):* - Not necessarily enlightened choice: not much standardised information

	guarantees, control by a public authority (FSMA, AMF, SEC, …) on information quality. - Free choice: large choice of investment possibilities ; simultaneous evaluation of investment possibilities is possible; lack of urgency.	available at the moment of recruiting. - Not entirely free choice: strong constrains limit the possibilities (e.g., labour market, geographic constraints, etc.); simultaneous evaluation of possibilities is difficult; urgency is present due to potential budgetary constraints.
	Risk at the moment of leaving the firm (divestment): Quick resolution; quick reinvestment; reversibility; no limit in selling/buying.	*Risk at the moment of leaving the firm (job change):* Length of job change process; inherent risk in the period (existence of trial periods); reputation risks related to frequent job changes.
Possibility of controlling the risk	*Economic control* Possibility to divide/diversify the risk (investment in multiple firms); liquidity benefits; possibility of specialisation of each firm.	*Economic control* Risk division/diversification is quasi-impossible; weak 'liquidity'; risky specialisation.
	Legal control Decision rights: nomination and removal of board administrators, mergers, dividends, etc.	*Legal control* No decision rights.

As such, it is apparent that the level and nature of workers' investments and risks arising through their participation in the firm's activity are very significant, hence rejecting the traditional view that shareholders should be the only ones to have control over the firm. The firm demos should therefore at least be constituted of both shareholders and workers.[11]

Though it may appealing to add other stakeholders such as customers and suppliers, workers and shareholders are a special type of stakeholder.

If we reject the claim that shareholders should be the only type of actor with rights of control on the firm's actions, one could ask why we should not also include other types of stakeholders beyond workers. Though this idea may be appealing, I shall show that in the context of firm democracy, not all stakeholders are concerned in the same way by the firm's activities.

The term 'stakeholder' started being used in the 1960s but became more popular in the 1980s. Most recently it became defined in the context of the ISO 26000 norm as "an individual or group with an interest in the decisions or activities of an organisation". The literature recognises

[11] We will see later which types of workers should be included.

that firms are social organisations dependent upon the contribution of different groups to the production of goods and services (R. E. Freeman and Reed 1983). There are many stakeholders which could be considered as relevant, such as shareholders, employees, managers, board members, customers, neighbours, suppliers, clients, local & national authorities.

Following the same two criteria of investment and risk exposure, we may distinguish between shareholders and workers on one side, and all the other stakeholders on the other side. Ferreras (2019) convincingly and succinctly explains why workers should not be lumped together with other stakeholders: they, unlike the other stakeholders, *constitute* firms. In short, (Ferreras 2019) states, “Workers, after all, are firms’ *labour investors*, and firms need them just as much as they need capital investors. In plain language, without labour investors, capital could not be made productive at all.” This is not the case (accepting a few exceptions) with other types of stakeholders.

This distinction can be summarised as follows:

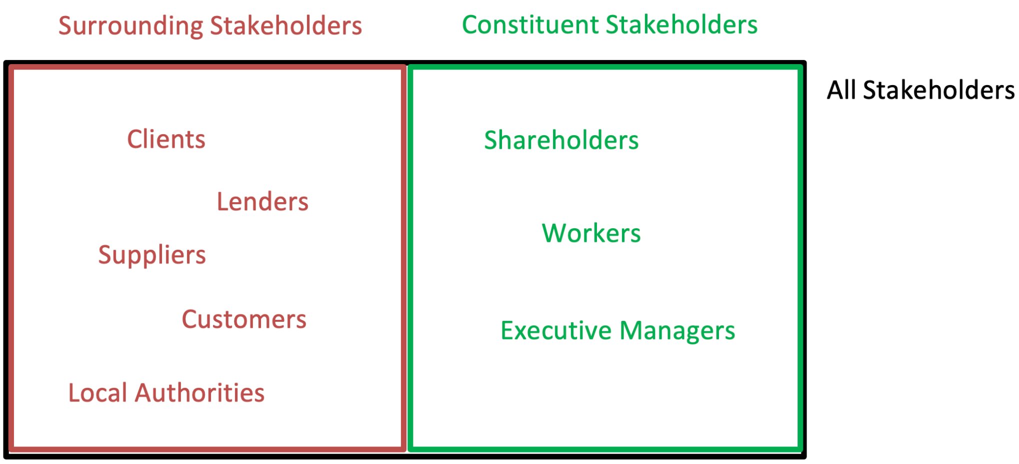
- *Constituent stakeholders:* The people who bear the risk of the firm’s activity and invest within the firm in a structural way, i.e., money, time, or competencies. Within this group you can find the shareholders and the workers who are at the heart of the firm.
- *Surrounding stakeholders:* The people who bear some risk of the firm’s activity, but which are not invested in it structurally. Within this group you have the lenders, clients, suppliers, local authorities, neighbours, etc.

Investments and exposure to risk of shareholders & workers are clearly much more significant than the ones taken by the ‘surrounding’ stakeholders, who may depend on the firm, but who generally do not make the same investment and are not exposed to the same risks related to the firm’s activity. There are clearly exceptions when we speak about a monopoly wherein the state or customers may be dependent on the firm. However, in many situations the state is often also a shareholder of the most important firms in a given company (e.g., postal service in Belgium Bpost is held by 50% + 1 share by the Belgian state). Additionally, this does not mean that concerns from surrounding stakeholders should be ignored. As stated by (Ferreras 2019), “consumer, supplier, and community interests, of course, need to be considered, involved, and accounted for in firm strategy. But we must not reduce the efforts and contributions of working people by pretending they are merely “the most affected” by corporations.”

<u>Following from this analysis, what does the firm demos look like?</u>

When we are thinking of implementing and assessing firm democracy, it thus appears reasonable to focus on the constituent stakeholders who bear more risk and invest much more structurally in the firm. The rights and rules in a democratic firm should therefore consider the special nature of shareholders and workers. In a visual way, out of all possible stakeholders, we therefore will focus on the constituent ones, i.e., the green box, when addressing firm democracy.

Figure 4 - Constituent vs. Surrounding Stakeholders



We should also acknowledge the complexity of the labour market, which requires us to be even more explicit in the determination of democratic subjects. This determination of democratic subjects is simple for shareholders but becomes more complex once we want to include workers. The labour market flexibility means that workers can have many different statuses in their relationship with a firm based on the contract type (i.e., employed or self-employed), contract length (i.e., limited or indefinite contract), and contract 'intensity' (i.e. full-time or part-time). Given the necessity to keep this first attempt simple, I suggest we should draw a clear line somewhere: in this context, we shall only take workers into account who necessarily meet the meet the following two conditions:

- Condition 1 - Contract Type: Employment contract (i.e., not freelancers or self-employed).
- Condition 2 - Contract length: At least a one-year contract.

Since I adopt a legal distinction which should consider the rights/obligations of firms/workers, the requirement to have an employment contract instead of a freelancer contract should signify an important investment and exposure to risk of the workers towards the firm.[12] In the OECD, self-employed workers form 16% of workers, and among these self-employed workers 16% are financially dependent on one client. This means that only 2.4% of workers are self-employed and bear significant risk exposure to one firm. Given that this number is pretty low, the purpose of simplicity gives me reasonable ground to make this cut-off.

The one-year threshold seems to make sense for a number of reasons: (1) in general among OECD countries, temporary employees with fixed-term employment contracts of a year or longer have been observed to be getting the same benefits as permanent employees with the same employer (Organisation for Economic Co-operation and Development Staff 2002). (2) Since most temporary jobs in OECD countries are one-year contracts, this ensures that we only include workers in a democratic process who have a long-term interest in the firm's activities and simplifies the practical calculations (Organisation for Economic Co-operation and Development Staff 2002). (3) Between one-third and two-thirds of temporary workers move into a permanent job within two years, suggesting important transitions from temporary workers into permanent employment positions. [13] (4) This one-year threshold is often a limit imposed within worker cooperatives in order to be an active member with voting rights in the AGM (CRESS NPDC and ConcertES 2012).

I decided not to put any requirements on the 'intensity' of the contract, since it would wrongly exclude a significant number of workers and since the most important element to consider is the extent to which a worker is engaged with a firm over time. Indeed, if we know that the average of part-time employment (defined as less than 30 hours of employment by the OECD - (Temporary employment n.d.)) in the OECD lies around 17%, with a maximum around 40% in the Netherlands and a minimum of 5% in Slovakia and Czech Republic, it would be unwise to exclude these workers (Laudage 2015). This is especially also important because the proportion of women taking part-time jobs is much higher than the men, which would therefore mean we would contribute to gender discrimination.

[12] I am aware that this will exclude many workers such as undocumented workers, and many vulnerable workers who work in the 'gig' economy. This will probably also exclude a wide variety of workers with significant investment and exposure to risk of a firm's activities, as a result of deliberate corporate action to push workers to their periphery in order to limit their responsibilities as employers (Doeringer and Piore 1971).

[13] The prevalence of temporary employment varies a lot between countries: A third of Spanish jobs is temporary, but in Luxembourg, Slovakia and the United States it is fewer than one in twenty. Temporary jobs are disproportionately filled by younger and less educated workers, though it is quite well-spread across a variety of sectors.

Unfortunately, it is practically impossible to apply such time thresholds for shareholders before awarding them with decision-making power, though it would probably be worth finding some form of commitment threshold for them as well.

C. Conceptualisation: What does democracy mean in firms?

I am entering some uncharted territory here since literature and thinking on democracies has not often been applied to capitalist firms, whilst standard economic theory has ignored the subject completely.

Inspired by a wide range of literature, writings, and examples in practice[14], one could attempt to map out the main pillars of firm democracy. These could include elements such as political equality, transparency, labour rights, respect for the law, working conditions, and inclusion. Though this would be a major achievement, such an attempt falls beyond the scope of this masters' thesis. Following from Part I and Part II, I shall focus on the balance of power between constituent stakeholders within the firm, which addresses core questions of what firm democracy means.

According to Ferreras (2017), in her book 'Firms as Political Entities', the threshold of democratisation takes place at the moment that the constituent in power grants the other constituent the same rights as those they previously enjoyed: the collective right to validate or veto the decisions. Similarly, Clerc (2019) notes that a system in which too much power is given to one particular type of constituent stakeholder cannot be democratic since it suffers from 'positional rationality' (Sen 1993): the dominant constituent stakeholder will operate with their own interests, biases, and objectives in mind, at the expense of the other constituent stakeholders. This means that there should be political equality (i.e., equal right in decision-

[14] This can include including state democracy (e.g., Economic Democracy Index), cooperatives, workers' councils, board representation, national legislations on employee participation, existing ESG measures, theories that (partly) include worker-democracy, and existing labels that (partly) include worker democracy.

making) between the constituent stakeholders of the firm: the group of shareholders and the group of workers in terms.[15]

D. Operationalisation: Construction of the index

Now that I have outlined to whom democracy applies within the context of a firm, as well as what democracy may mean, I shall attempt to translate this within a democracy index. Before making this index, I should clarify (1) the process through which an index should be made in social science research, and (2) the criteria used to assess this measurement instrument.

How do we make an index in social sciences?

Once we have defined a theoretical construct, we must enter the operationalisation phase in order to determine how we can exactly measure this theoretical construct. This phase consists of the development of indicators and a methodology to measure this construct. In his book 'Social Science Research: Principles, Methods and Practices', Bhattacherjee (2012) outlines three steps in the operationalisation phase:

Firstly, we must choose the components of an index. This step requires us to define firm democracy in a more granular way, dividing it into a series of categories. Secondly, the levels of measurement, also called rating scales, of these components must be determined. For example, a customer satisfaction scale could be constructed with five levels: 'strongly dissatisfied', 'somewhat dissatisfied', 'neutral', 'somewhat satisfied' and 'strongly satisfied', though these levels need not be awarded a specific ranking (Bhattacherjee 2012). Finally, we have to determine the aggregation and scoring rules (Bhattacherjee 2012) across the chosen components.

How do we assess an index?

Once we know how an index should be made, it is paramount to define what criteria will be used to assess this index. Many scholars agree that there are two main pillars which are essential to the formation of a measurement instrument in (social) science research: Reliability and

[15] I won't attempt to go a step further to define what democracy would mean *among* shareholders and *among* workers due to scope constraints, though this is probably required for a more thorough definition of democracy within firms.

Validity (Drost 2011; Mohajan 2017). They are jointly called the ‘psychometric properties’ of measurement instruments, and are “the yardsticks against which the adequacy and accuracy of our measurement procedures are evaluated in scientific research” (Bhattacherjee 2012, p.55). Basically, we must ensure that the measurement instrument (1) measures the unobservable construct that we wanted to measure (i.e., the index is valid), and (2) measures the intended construct consistently and precisely (i.e., the index is reliable).

On top of these two fundamental elements, I should add the potential for bias/generalisability of an index, as well as its implementation feasibility (Bhattacherjee 2012).

Validity

Validity refers to “the extent to which a measure adequately represents the underlying construct that it is supposed to measure.” (Bhattacherjee 2012). Validity can be assessed using theoretical and empirical approaches, and ideally both. Theoretically, we must focus on how well the idea of a given theoretical construct has been translated and represented into an operational measure (Bhattacherjee 2012). This is typically called ‘translational validity’ (or representational validity) and is assessed using a panel of expert judges who rate each component and the methodology adopted. To assess validity empirically, we must evaluate how well a certain measure relates to one or more well-specified, predetermined, external criterion (a reference measure), based on empirical observations (Bhattacherjee 2012). In our context we could not require that the validity of the index be assessed empirically, since there is no reference measure which we could use.

Reliability

Reliability relates to the repeatability of the measurement process: an index should be formed so that a measurement procedure leads to the same measurements every time, regardless of who is performing it (Drost 2011). The best method to assess reliability is based on the test-retest approach: if we repeat the measurement of the same component multiple times in different circumstances (e.g., by different assessors), we can measure the coefficient of stability. The test result is the correlation between the two sets of results. The higher the correlation coefficient, the more reliable the measurement process. We can already obtain an a priori assessment of reliability by looking at the transparency, clarity, and simplicity of the measurement process.

Bias/Generalisability

Next to validity and reliability, we should also be aware of the potential biases and generalisability of a measurement instrument (Bhattacherjee 2012). Though this typically relates to factors such as sample size and sample representativeness of a particular study, they are also relevant for the instrument itself. In this case, we should make sure that the index should be usable (and impartial) on a variety of different firms independent of their context, sector, size, position in history, and geographic location.

Implementation Feasibility

Beyond the methodological concerns, I would also bring forward the importance of the feasibility of implementation of such an index. Indeed, if this index is built to enable an assessment of firm democracy, then we should be aware of the potential obstacles related to its use in practice. For instance, to limit the excessive reporting efforts and costs for individual firms, I would recommend having a limited number of indicators.

Attempt to sketch a firm democracy performance index

Step 1: Choosing the components

The first step of the index-construction process requires me to determine which components should be integrated in the assessment of political equality between workers and shareholders. For firm democracy, when we attempt to materialise the pillar of political equality, there are two methods to assess the degree of power of workers and shareholders that should finish with similar results. I call and describe them as follows:

- Method 1 – 'Institutional Approach': either we look at the organisational level and institutional body through which workers and shareholders can participate (e.g., to what extent does this constituent stakeholder participate in decision-making at the board-level?), or
- Method 2 – 'Jurisdiction-based Approach': we look at the scope and areas of decisions in which constituent stakeholders can participate (e.g., to what extent does this constituent stakeholder participate in decision-making on recruiting?).

In order to enable the applicability of the index to various different types of organisations, as explained below, I propose to adopt the latter approach and to focus on the different areas of competencies/jurisdictions on which workers/shareholders may have a say. The main advantage of this method is its flexibility: it can subsequently be translated into a given operational structure depending on the context in which a firm is active. As such, for example, I will not include indicators regarding the presence of workers/shareholders at the board, but rather include indicators on the level of participation in the firms' types of decisions. The main reason behind this choice is that the powers of different institutional structures are different across different national legislations (e.g., Certain companies have a single board of directors exercising both supervisory and management functions, whilst others have two separate boards for these two competencies.). This means that regardless of the internal organisational structure of a given firm, the strength of shareholder/worker participation on any area of the firm's activity can be evaluated irrespectively of the organisational level (department, plant, board, general assembly) at which this activity is managed.

Decision-making can exist in different types of issues, which can be grouped into five main categories (Conchon 2011; Xiaoyang and Chan 2005; Clerc 2019; Favereau 2018). These categories are often generally aligned with a certain organisational level at which the topic is being discussed, from the lowest to the highest. In each category there are specific areas of competencies on which workers could have an influence.

1) *Category 1 – Fundamental Rights:* The latter are groups of rights that have been recognised by a high degree of protection from infringement. They are typically identified in a constitution, international treaties, etc. In the context of firm, it is mainly the capacity of stakeholders to protect their rights which is relevant. For workers, for example, this includes for example the right to have and form a union in the workplace.
2) *Category 2 – Day to day:* This consists of the activities that a firm and its workers engage on a daily basis which affect peoples' immediate jobs (task issues). Except for a survey sent out to workers/shareholders to ask their opinion on the extent of their personal autonomy on task management (from 0-10), this is difficult to materialise in an indicator. This category will therefore be optional in this index.
3) *Category 3 – Working Conditions:* Working environment and aspects related to terms and conditions of employment. This is typically determined at establishment level, firm-level, or through collective bargaining at the sector or national level.
    a. Determination of pay: wages, and bonuses for workers.

b. Occupational health and safety: Aspects related to the safety, health, and welfare of people at work (e.g., rules and conditions, welfare fund, housing, benefits, etc.).
c. Organisation of regular work processes (e.g., working time arrangements, holidays, firm rules, etc.).
d. Personnel disciplinary issues: this includes all corrective and disciplinary actions taken in case unacceptable behaviour has been found among workers.

4) *Category 4 – Business Operations:* Aspects which are more operational business related (policy issues). This is typically discussed within executive meetings.
    a. Employment & human resources planning (including contracts, career management, training, and firing).
    b. Production plans and methods: this is the action whereby firms plan their allocation of staff, materials, and manufacturing capacity to deliver their products and services.
    c. Selection of managers: this refers to the evaluation and research to choose candidates applying to or within an organisation to become new managers.
    d. Performance monitoring & management (e.g., main targets for senior cadres): Process through which firms assess the results obtained by different members/departments, and act accordingly through rewards or penalties.
5) *Category 5 – Strategy:* Aspects which concern the strategy of the firm. This is typically discussed at the board and/or general assembly.
    a. Surplus allocation (i.e., dividends, executive remuneration, etc.): When a firm has a certain amount of value which exceeds the level utilised there is a surplus left. This surplus can consist of income, profits, capital, and goods. As such, this refers to the process by which this surplus is allocated between various claimants.
    b. Firm long-term and annual plans: this relates to the objectives, actions and budgets set to guide workers and managers in line with a firm's broader strategic vision beyond the upcoming year.
    c. Major investment decisions occurring at a high level (i.e., above a certain threshold): capital allocation which goes beyond day-to-day spending and relates to new strategic orientations.
    d. Major structural changes in the firm: major changes which affect the way authority, capital, information and responsibility flows within a firm, hence the

hierarchical organisational and reporting structure within a firm (e.g., restructurings, relocations, mergers, and takeovers, etc.).

Step 2: Determining the levels of measurement

For each component of the index, the scale should reflect the extent to which shareholders vs. workers have decision-making power. Since traditional capitalist firms (i.e., excluding codetermination and other democratic practices) are such that shareholders have all the power, the scaling system I propose will rather focus on providing an indication of the extent to which workers have a say on each component. Going back to our initial definition of political equality, the threshold of democratisation takes place at the moment that the constituent in power grants the other constituent the same rights as those they previously enjoyed: the collective right to validate or veto the decisions. As such, the minimum value of the scale represents a situation where workers have zero say, and the maximum value of the scale represents a situation where there is political equality between workers and shareholders.

I have thus developed an ordinal scale which assigns a specific value of worker participation for the components determined above. The latter can be divided into three levels:

- Information: fully informed about the current and future elements on the given topic. I propose to give 1 point for information.
- Consultation: fully and clearly consulted about the current and future elements on the given topic. I will give 1.5 points on consultation, because it is more important to be able to inform policy than just to be informed.
- Decision-making: influence in the decisions made regarding the current and future elements on the given topic. This is most important since it involves actually having a say in decisions, hence points will be higher. Within decision-making there are three sub-types of levels, from the lowest to the highest:
    - Weak decision-making: Less than 50% (but nonetheless existent) weight in the vote compared to shareholders. I will give 2 points on weak decision-making.
    - Moderate decision-making: Less than 50% weight in the vote compared to shareholders, but with a veto on this topic. I will give 2.5 points on moderate decision-making.
    - Strong decision-making: Majority power in the vote compared to shareholders. I will give 3 points on strong decision-making.

This participation can be direct or indirect, the latter being often encouraged for issues of practicality, in the same way that modern state-democracies are representative democracies with parliamentary representatives elected by/ drawn randomly within a population. Within the context of firms, these representatives could be brought forward by trade unions, but this need not be the case. It is also possible that some of these categories are actually determined outside of the firm's scope, such as in international conventions, national legislation, sector-level bargaining, etc.

Since this scale is not relevant and helpful for the first component related to the protection of fundamental rights, I suggest the following dichotomic scale for that first indicator:

- All workers have the right to have and form a union in the workplace: 3 points.
- Not all workers have the right to have and form a union in the workplace: 0 points.

Step 3: Clarifying the aggregation and scoring rules

To keep thing simple in terms of scoring and aggregation, I suggest the following approach:

- Indicators are brought together into five main categories.
- The category indices are based on the sum of the indicator scores in the category, converted to a 0-10 scale.
- The overall index score is the average of the categories, and therefore also on a 0-10 scale.

This is very similar to the aggregation approach adopted by the Economist's State Democracy Index, which is on a 0 to 10 scale, is based on the ratings for 60 indicators, grouped into five categories (The Economist Intelligence Unit 2021). Each category has a rating on a 0 to 10 scale, and the overall index is the simple average of the five category indexes. The Human Development Index also uses a similar methodology with fewer indicators (Human Development Index (HDI) n.d.).

E. Illustration – this index in practice and the potential for comparability

The best way to understand how this index can be used is to attempt it myself. To do so, I chose 4 different firms which can serve as cases to illustrate the results obtained when we measure their democracy performance with the index created.

To do so, I chose 4 different firms which can illustrate the flexibility of the index and its comparative power. In a way, this is somewhat similar to case study analysis, since I am picking a very limited number of empirical subjects on which I test a certain measurement and theory. As such, I should adhere to certain academic standards and process in the selection of cases. Case study analysis focuses on a small number of cases to provide insight into results which may be generalisable to a larger population. As mentioned by Seawright and Gerring (2008) in their article 'Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options', one desires two objectives: (1) a representative sample and (2) useful variation on the dimensions of theoretical interest. Since the goal of this section is not to perform any empirical inferences, but rather to illustrate the usefulness of a measurement instrument, I shall consider these two objectives as guiding principles rather than strict requirements. The objective of representativeness can be obtained by choosing firms which vary across their size, sector of activity, and geographic location.[16] The second objective can be obtained by choosing firms which appear to have different ways through which power is distributed between shareholders and workers.

I have therefore made the following suggestion of firms which appear relevant based on their recent appearance in the news related to workplace democracy:

Table 17 - Description of 4 firms to illustrate the Firm Democracy Performance Index

Firm Name	Size	Sector	Geography	Power distribution
Amazon.com, Inc.	Very large: - US$469.822 billion revenues (2021) - 1,608,000 worldwide employees (December 2021)	Multinational technology company which focuses on e-commerce, cloud computing, digital streaming, and artificial intelligence.	US-based but global activity. Headquarters in Seattle, USA.	Highly concentrated for shareholders with very limited workers' rights.
Bauer AG	Large: - EUR 1.5 billion revenues (2021)	Stock-market-listed construction and machinery manufacturing concern. The core business is the manufacture of complex excavation pits,	Germany. Headquarters in Schrobenhausen in Upper Bavaria, Germany.	Firm with legally mandatory codetermination, hence suggesting some form of worker decision-

[16] I am also limited by the availability of data to perform this analysis. Geographically, for example, I was limited to European and American firms to have adequate data. As such, there are some components for which I may not have the actual answer.

	- 12,000 employees (2021)	foundations and vertical seals as well as the development and manufacture of machines for this purpose.		making at the board-level.
CAMELEON [17]	SME: - EUR 19.5 million € revenues (2021) - 80 employees (2022)	Apparel & Clothing outlet stores.	Belgium. Two shops and headquarters in Belgium.	Firm which enabled its workers to become shareholders by performing a capital raise. This should enable workers to obtain some representation at the board-level.
Swania	SME: - EUR 46 million € revenues (2020) - 19 employees (2020)	Sale of all products and articles of household maintenance, cleaning, washing, cosmetology, perfumery, and hygiene.	France, with headquarters in Nanterre.	Traditional French SME which was recently acquired by Henkel France. This should not have a particularly high worker decision-making power.

Let's now perform the firm democracy performance assessment for each of these cases individually. This exercise has been completed with all publicly available information from sources such as firms' websites, statutes, published reports, national legislations, etc.

Amazon.com, Inc.

Table 18 - Example of Firm Democracy Assessment on Amazon.com, Inc.

Firm Democracy Assessment					
Category	**Indicator**	**Score**	**Potential Explanation**	**Sum**	**Scaled sum**
Fundamental Rights	Formal representation mechanisms for workers to defend their rights.	0/3	« In 1935, Congress passed the National Labor Relations Act (NLRA), making clear that it is the policy of the United States to encourage collective bargaining by protecting workers' full freedom of association. The NLRA protects workplace democracy by providing employees at private-sector workplaces the fundamental right to seek better working conditions and designation of representation without fear of retaliation» (NLRA 1935). However, in practice, many state-level laws have enabled firms to prevent their workers to unionise.	0/3	0/10

[17] The legal entity behind CAMELEON is in fact Rengo (SRL).

			Recently a number of trade unions were created by worker collectives in some plants, but this is far from being applicable for all workers (Sherman 2022).		
Day to day	Survey sent out to workers.	NA	NA	NA	NA
Working Conditions	Determination of pay	1/3	Workers are simply informed about the wages associated with Amazon's jobs. Minimum wages are determined by states and at the national level, without a requirement of sector-level bargaining.	4/12	3.33/10
	Occupational health and safety	1/3	Occupational health and safety conditions and rules are determined by states and at the national level, without a requirement of sector-level bargaining.		
	Regular Work Processes	1/3	Workers are not included in the decisions to determine work processes, they are merely informed about the policy. Rules related to work processes are determined by states and at the national level, without a requirement of sector-level bargaining.		
	Personnel Discipline	1/3	Workers are not included in the disciplinary discussions, they are merely informed about the policy.		
Business Operations	Employment & HR	1/3	Workers are not included in the employment/HR discussions, they are merely informed about the policy and processes.	4/12	3.33/10
	Production plans & methods	1/3	Workers are not consulted regarding production methods and plans for the coming year.		
	Selection of managers	1/3	Workers are not formally consulted regarding the selection of managers.		
	Performance monitoring and management	1/3	Worker and department performance monitoring is very transparent, but the workers are not consulted on this topic.		
Strategy	Surplus allocation	1/3	Workers are not involved in the board or Annual General Meeting (Amazon.com, Inc. 2022).	4/12	3.33/10
	Long-term & annual plans	1/3	Workers are not involved in the board or Annual General Meeting (Amazon.com, Inc. 2022).		
	Major investment decisions	1/3	Workers are not involved in the board or Annual General Meeting (Amazon.com, Inc. 2022).		
	Major structural changes	1/3	Workers are not involved in the board or Annual General Meeting (Amazon.com, Inc. 2022).		

As such, Amazon.com, Inc. would obtain a total firm democracy score of 2.498/10 (i.e. (0 + 3.33 + 3.33 + 3.33/4).

Bauer AG

Table 19 - Example of Firm Democracy Assessment on Bauer AG.

Firm Democracy Assessment					
Category	**Indicator**	**Score**	**Potential Explanation**	**Sum**	**Scaled sum**
Fundamental Rights	Formal representation mechanisms for workers to defend their rights.	3/3	Workers have two main ways to protect their fundamental rights: codetermination at the board-level[18], and trade unions working at the sector-level and in the plants (Supervisory Board Members - Employee Representatives n.d.; Bauer AG 2019). German Basic Law guarantees freedom of association (Art. 9 para. 3) as well as free choice of occupation and prohibition of forced labour (Art. 12). The Act on Collective Agreements adopted on 25/08/1969 and last amended on 29/10/1974 governs collective agreements (International Labour Organisation (ILO) 2001).	3/3	10/10
Day to day	Survey sent out to workers.	NA	NA	NA	NA
Working Conditions	Determination of pay	2/3	Workers have two main ways to protect their fundamental rights: codetermination at the board-level, and trade unions working at the sector-level and in the plants (Supervisory Board Members - Employee Representatives n.d.).	9.5/12	7.92/10
	Occupational health and safety	2.5/3	Workers have two main ways to protect their fundamental rights: codetermination at the board-level, and trade unions working at the sector-level and in the plants (Supervisory Board Members - Employee Representatives n.d.). German Basic Law includes the following acts on this topic: Maternity Protection Act; Ordinance on Maternity Protection at the Workplace; Young Workers Protection Act; Working Time Act; Act on the Payment of Child Raising Benefit and Child Raising Leave; Insolvency Ordinance (International Labour Organisation (ILO) 2001).		

[18] You can find the composition of employee representatives on the supervisory board on Bauer's website.

			On Occupational health and safety questions, the employee members of the supervisory board have a veto power (Conchon 2011).		
	Regular Work Processes	2.5/3	Idem. On questions related to regular work processes, the employee members of the supervisory board have a veto power (Conchon 2011).		
	Personnel Discipline	2.5/3	Idem. On questions related to personnel discipline, the employee members of the supervisory board have a veto power (Conchon 2011).		
Business Operations	Employment & HR	2/3	Workers have two main ways to protect their fundamental rights: codetermination at the board-level, and trade unions working at the sector-level and in the plants (Supervisory Board Members - Employee Representatives n.d.).	8/12	7.5/10
	Production plans & methods	2/3	Idem.		
	Selection of managers	2/3	Idem.		
	Performance monitoring and management	2/3	Idem.		
Strategy	Surplus allocation	2/3	Codetermination at the board-level (Supervisory Board Members - Employee Representatives n.d.).	8/12	7.5/10
	Long-term & annual plans	2/3	Codetermination at the board-level (Supervisory Board Members - Employee Representatives n.d.).		
	Major investment decisions	2/3	Codetermination at the board-level (Supervisory Board Members - Employee Representatives n.d.).		
	Major structural changes	2/3	Codetermination at the board-level (Supervisory Board Members - Employee Representatives n.d.).		

As such, Bauer AG would obtain a total firm democracy score of 8.23/10 (i.e. (10 + 7.92 + 7.5 + 7.5)/4).

CAMELEON

Table 20 - Example of Firm Democracy Assessment on CAMELEON.

Firm Democracy Assessment					
Category	**Indicator**	**Score**	**Potential Explanation**	**Sum**	**Scaled sum**
Fundamental Rights	Formal representation	3/3	Workers have two main ways to protect their fundamental rights: participation in	3/3	10/10

	mechanisms for workers to defend their rights.		board meetings (Rengo SRL 2021), and the general dispositions across Belgium. Belgium has a very elaborate system of social dialogue at all levels (cross-industry, sectoral or company level) and in the different socio-economic sectors (economic policy, social policy, safety and health matters). Every two years, the social partners try to reach an interprofessional agreement at national level. In this agreement, measures concerning social progress (wages, employment, traineeships,...) are taken for both working and non-working people. The interprofessional agreement is applicable to the entire national private sector (Portail du Droit Belge n.d.).		
Day to day	Survey sent out to workers.	NA	NA	NA	NA
Working Conditions	Determination of pay	2/3	Salaries are decided by a collective bargaining taking place at the sectoral level, between workers' elected union representatives and the employers representatives. (Portail du Droit Belge n.d.).	8/12	7.5/10
	Occupational health and safety	2/3	Workers have two main ways to protect their fundamental rights: participation in board meetings (Rengo SRL 2021), and the general dispositions across Belgium. Belgium has a very elaborate system of social dialogue at all levels (cross-industry, sectoral or company level) and in the different socio-economic sectors (economic policy, social policy, safety and health matters). In Belgium, social security (better than welfare) is governed by unions and employers' associations and the State, so workers are de facto represented. In all companies with at least 50 employees, specific committees (for prevention and protection at work - Comité pour la Prévention et la Protection au Travail) must also be set up. The tasks of the CPPT are safety, public health, hygiene and beautification of the workplace. The workers' representatives on the CPPT are - as mentioned above - elected every four years by all the workers in the company (Portail du Droit Belge n.d.).		

	Regular Work Processes	2/3	Workers have two main ways to protect their fundamental rights: participation in board meetings (Rengo SRL 2021), and the general dispositions across Belgium. Belgium has a very elaborate system of social dialogue at all levels (cross-industry, sectoral or company level) and in the different socio-economic sectors (economic policy, social policy, safety and health matters).		
	Personnel Discipline	2/3	Idem.		
Business Operations	Employment & HR	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).	8/12	7.5/10
	Production plans & methods	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).		
	Selection of managers	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).		
	Performance monitoring and management	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).		
Strategy	Surplus allocation	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).	8/12	7.5/10
	Long-term & annual plans	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).		
	Major investment decisions	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).		
	Major structural changes	2/3	Workers have some limited participation in board meetings (Rengo SRL 2021).		

As such, CAMELEON would obtain a total firm democracy score of 8.125/10 (i.e. (10 + 7.5 + 7.5 + 7.5)/4).

Swania

Table 21 - Example of Firm Democracy Assessment on CAMELEON.

Firm Democracy Assessment					
Category	**Indicator**	**Score**	**Potential Explanation**	**Sum**	**Scaled sum**
Fundamental Rights	Formal representation mechanisms for workers to	3/3	Every worker in France may defend their rights and interests through trade union action and join the trade union of their choice (paragraph 6). French Labour law	3/3	10/10

	defend their rights.		organises labour relations between the employer and the individual employee and the group of employees. It covers many areas such as employment contracts, remuneration, working hours, holidays, discipline, dismissal, employment, training, health and safety at work, collective bargaining, strikes and staff representation. (République Française n.d.)		
Day to day	Survey sent out to workers.	NA	NA	NA	NA
Working Conditions	Determination of pay	2/3	Salaries are decided by a collective bargaining taking place at the sectoral level, between workers' elected union representatives and the employers representatives. French Labour law organises labour relations between the employer and the individual employee and the group of employees. It covers many areas such as employment contracts, remuneration, working hours, holidays, discipline, dismissal, employment, training, health and safety at work, collective bargaining, strikes and staff representation. (République Française n.d.)	8/12	7.5/10
	Occupational health and safety	2/3	French Labour law organises labour relations between the employer and the individual employee and the group of employees. It covers many areas such as employment contracts, remuneration, working hours, holidays, discipline, dismissal, employment, training, health and safety at work, collective bargaining, strikes and staff representation (République Française n.d.).		
	Regular Work Processes	2/3	Idem.		
	Personnel Discipline	2/3	Idem.		
Business Operations	Employment & HR	1/3	Workers are not included in the employment/HR discussions, they are merely informed about the policy and processes.	4/12	3.33/10
	Production plans & methods	1/3	Workers are not consulted regarding production methods and plans for the coming year.		

	Selection of managers	1/3	Workers are not formally consulted regarding the selection of managers.		
	Performance monitoring and management	1/3	Worker and department performance monitoring is very transparent, but the workers are not consulted on this topic.		
Strategy	Surplus allocation	1/3	Workers are not involved in the board or Annual General Meeting (RCS: Nanterre 2022)	4/12	3.33/10
	Long-term & annual plans	1/3	Workers are not involved in the board or Annual General Meeting (RCS: Nanterre 2022)		
	Major investment decisions	1/3	Workers are not involved in the board or Annual General Meeting (RCS: Nanterre 2022)		
	Major structural changes	1/3	Workers are not involved in the board or Annual General Meeting (RCS: Nanterre 2022)		

As such, Swania would obtain a total firm democracy score of 6.04/10 (i.e. (10 + 7.5 + 3.33 + 3.33)/4).

We can therefore see that this index enables us to distinguish between different types of power sharing between shareholders and workers. Interestingly, the results of the index are very dependent on the national legislations and rules in place in a given country. As such, this shows that the variation in power-sharing can arise mainly from the firm's structure and the rules related to labour law and corporate law applicable in relevant countries. Additionally, further research should probably evaluate the impact of changing points and weights awarded to each component.

F. Evaluation of the index

Let's now assess this index in light of the original methodological pillars outlined above. In the table below I aim to provide the most honest evaluation of the index in order to identify its strengths and weaknesses, and guide future research which may be built upon it.

Methodological Pillar	**How is this index respecting this pillar?**	**How is this index not respecting this pillar?**
Validity	- Theoretically, the level of influence clearly draws from a wide range of studies which have assessed the level of worker participation.	- The jurisdiction-based approach, compared to the institutional approach, shows fewer explicit links with theories of firm democracy and empirical studies related to Board Representation and workers' councils. Indeed, the institutional approach would more

	- The categorisation shows a real closeness to the areas of activity of firms across a variety of industries. - We cannot assess the validity of the index empirically since there is no reference point.	closely match the actions happening in these institutional bodies which are emblematic operationalisations of firm democratisation. - The focus on the political equality between shareholders and workers means that there is a lot of ground left to cover in order to build a firm democracy index which is holistic in its approach. - The index makes abstraction of the role of collective bargaining and trade unions within worker participation and negotiation, which can be indicative of a significant distance from the reality on the ground. - We cannot assess the validity of the index empirically since there is no reference point. - The choice of components, point system and weights awarded to different components of the index could probably be refined based on a review from experts and workers in practice.
Reliability	- From the simplicity and the detailed and clear explanation of the process and indicators, it should be reasonably easy for two people to obtain the same scores.	- Poor definition of individual indicators and limited distinction between information, consultation, and decision-making means that in practice there may be some individual interpretation that is still required. This may subsequently lead to differences in the scoring.
Bias/Generalisability	- The advantage of the jurisdiction-based approach is that this index is agnostic of the size of the firm and can be used for both small, medium, and large enterprises. - The approach is also very compatible with alternative organisational structures which may arise in a variety of countries and jurisdictions, especially across the OECD countries. - This approach is easily applicable to firms in a variety of sectors, and could actually even be applied a posteriori to firms in the past, which may be helpful for longitudinal studies.	- Even though the index is applicable to firms of any size, perhaps the demands for larger firms in terms of democracy should be higher in virtue of their greater resources, hence we should probably think of changing the scoring methodology depending on the firm size. - The jurisdiction-based approach may be difficult to be implemented in practice due to the additional distance with the reality on the ground. If an index had already mentioned which institutional structures and bodies must be assessed, it would ensure its applicability in specific jurisdictions. There thus seems to be a trade-off between the flexibility awarded by the area-based approach compared to the closeness to reality awarded by an institutional approach. - The applicability of the index may be more difficult in complex contexts with

		subsidiaries. Indeed, the index in its current form does not specify at which level, when, and which workers should be involved in the decision-making on any given topic. The more firms become complex, the more precision on institutional implementation would become helpful.
Implementation Feasibility	- There are only 14 individual indicators. - The scoring methodology only contains less than 5 calculations in total.	- There are sometimes overlaps with regards to the scope of indicators. This means that the indicators are not mutually exclusive. - Indicators are not very well-defined and may be hard to use in practice.

In sum, the index is clearly very simple, flexible, and transparent, and provides a useful tool to rank firms based on their level of democratisation. It enables a strong comparability between a wide variety of firms, independently of their size, sector of activity, and geography.

Like any potential tool, it requires much more thought, evaluation, and most importantly real-life applications in order to assess its usefulness and improve it accordingly. For instance, to enhance the theoretical assessment of this index's validity, experts in the field of firm democracy could assess it and suggest improvements. In terms of reliability, further research could perform a test-retest procedure whereby multiple people assess the same list of firms with the firm democracy performance index. The correlation coefficient of scores would provide us with an idea of the repeatability of the index as a whole and enable us to identify the components of the index which are less precise.

The day this index has been made more robust, it could provide a concrete and novel source of reasoning about the dynamics between various dimensions of firm performance, both financial and non-financial. Let's even suppose that ESG ratings in the future overcome their current weaknesses and are adequate measures of firm performance on ESG topics, the combination of a robust firm democracy performance index and ESG ratings would give us much more tools to assess firm performance in a multidimensional way.

G. Conclusion

In the third part of this thesis, I was able to outline a number of important elements to expand our abilities in terms of scientific knowledge and practice on the topic of firm democracy. I first explained that firm democracy should be applied to workers and shareholders since they form quite special stakeholders in virtue of their risk exposure and investment in the firm. Secondly, I provided a high-level definition of democracy within the context of firms. The third section enabled me to gradually construct a firm democracy index, the usefulness of which I assess very honestly in section 4. This index basically enables one to easily assess the level of worker influence on all main areas of activity within a firm. Though there still is a lot of work to refine its methodology and indicators, it appears to already form a very flexible and simple tool to gain a first insight on the level of democratisation of any firm across a variety of sectors, countries, and sizes. It could also contribute to having better tools to assess the multidimensional performance of firms, as well as the links between firm democracy and other non-financial aspects.

General Conclusion

I started this thesis asking whether there is any empirical relevance in assessing firm democracy. This thesis has shown that, despite the presence of missing pieces in the existing research puzzle on this topic, there are substantial relationships to be noted between firm democracy and a firm's economic, social, and environmental performance. Firm democracy generally does not lead to undesirable outcomes: it has even been associated to strong positive results in terms of worker productivity, lower levels of involuntary worker layoffs, higher levels of job satisfaction, and the adoption of more environmentally policies. Nevertheless, our empirical understanding of firm democracy and other aspects of firm performance is strongly mitigated by our current limited ability to measure and distinguish between different levels/types of firm democratisation.

Part II and Part III of the thesis were thus aimed at exploring whether and how we could even measure the level of democratisation of a firm. In light of the enormous prevalence of ESG ratings in today's financial and corporate world when we speak of assessing non-financial factors related to the environment, social, and governance topics, I could not escape a critical analysis of their usefulness in assessing firm democracy and other non-financial aspects of firm performance. The verdict is quite clear: though they could be a source of inspiration, they are not very useful in their current format, and this is mainly because they are designed and used as a financial risk-mitigation tool rather than a firm ESG progress measurement tool. This outcome led me to Part III, in which I attempt to provide a tool to enable the measurement of firm democracy, taking into account the lessons learned from ESG ratings. Though the index I constructed has important limitations, I hope that it will support further efforts in understanding this complex subject.

Given the exploratory nature of this research project, the limitations of the index offer clear avenues for future research: Firstly, the validity of the index could be evaluated and improved theoretically by a panel of experts on firm democracy, and why not even in a democratic fashion through a collaborative approach with workers and shareholders together. This can notably include a review of the components selected, their weights, and the scoring system. Secondly, the reliability of the index could be assessed with the test-retest method whereby a stability coefficient can be calculated. Thirdly, once validity and reliability have been improved, a wide scale application of the index on a larger sample of firms could enable us to obtain a view of the adoption and state of firm democracy. Fourthly, improvements in ESG ratings to address the identified weaknesses are required, potentially further enabling research combining them to assess empirical links between firm democracy and other non-financial issues such as social and environmental performance. Such further scientific endeavours would be of great value in light of the responsibility and capacity of firms to make significant contributions to society.

Bibliography

Adam, Julian. 2018. *Voluntary Quits: Do Works Councils Matter? An Analysis of the Reform of the German Works Constitution Act 2001*. Bavarian Graduate Program in Economics (BGPE). https://EconPapers.repec.org/RePEc:bav:wpaper:179_adam.

Addison, John, Claus Schnabel, and Joachim Wagner. 2001. 'Work Councils in Germany: Their Effects on Establishment Performance'. *Oxford Economic Papers, Oxford University Press* 53(4): 659–94.

Addison, John, Stanley Siebert, Joachim Wagner, and Xiangdong Wei. 2000. 'Worker Participation and Firm Performance: Evidence from Germany and Britain'. *British Journal of Industrial Relations* 38(1): 7–48.

Addison, John T. 2005. 'The Determinants of Firm Performance: Unions, Works Councils, and Employee Involvement/High Performance Work Practices'. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=738103 (April 10, 2022).

Addison, John T. 2009. *The Economics of Codetermination Lessons from the German Experience*. https://doi.org/10.1057/9780230104242 (July 24, 2022).

Addison, John T., Thorsten Schank, Claus Schnabel, and Joachim Wagner. 2007. 'Do Works Councils Inhibit Investment?' *ILR Review* 60(2): 187–203.

Addison, John T., and Paulino Teixeira. 2003. 'The Economics of Employment Protection'. *Journal of Labor Research* 24(1): 85–128.

Addison, John T., Paulino Teixeira, and Thomas Zwick. 2010. 'German Works Councils and the Anatomy of Wages'. *ILR Review* 63(2): 247–70.

Agirre, Izaskun, Pedro Reinares, and Fred Freundlich. 2015. 'Does a Democratic Management Model Enhance Performance through Market Orientation? Empirical Evidence from the Mondragon Industrial Group'. *Review of Radical Political Economics* 47(3): 345–67.

Alchian, Armen A., and Harold Demsetz. 1972. 'Production, Information Costs, and Economic Organization'. *The American Economic Review* 62(5): 777–95.

Amazon.com, Inc. 2022. *Notice of 2022 Annual Meeting of Shareholders & Proxy Statement*. https://s2.q4cdn.com/299287126/files/doc_financials/2022/ar/Amazon-2022-Proxy-Statement.pdf.

Arnold, Daniel, Tobias Brändle, and Laszlo Goerke. 2018. 'Sickness Absence and Works Councils: Evidence from German Individual and Linked Employer-Employee Data'. *Industrial Relations: A Journal of Economy and Society* 57(2): 260–95.

Askildsen, Jan Erik, Uwe Jirjahn, and Stephen Smith. 2006. 'Works Councils and Environmental Investment: Theory and Evidence from German Panel Data'. *Journal of Economic Behavior & Organization* 60(3): 346–72.

Avetisyan, Emma, and Kai Hockerts. 2017. 'The Consolidation of the ESG Rating Industry as an Enactment of Institutional Retrogression: Consolidation of the ESG Rating Industry'. *Business Strategy and the Environment* 26(3): 316–30.

Balsmeier, Benjamin, Andreas Bermig, Alexander Dilger, and Hannah Geyer. 2011. ‘Corporate Governance and Employee Power in the Boardroom: An Applied Game Theoretical Analysis.’ *Diskussionspapier des Instituts für Organisationsökonomik* No. 9/2011.

Barbu, Elena M., Pascal Dumontier, Niculae Feleagă, and Liliana Feleagă. 2014. ‘Mandatory Environmental Disclosures by Companies Complying with IASs/IFRSs: The Cases of France, Germany, and the UK’. *The International Journal of Accounting* 49(2): 231–47.

Bauer AG. 2019. *BAUER Aktiengesellschaft Schrobenhausen - Articles of Association*.

Baums, Theodor, and Bernd Frick. 1995. ‘Co-Determination in Germany: The Impact of Court Decisions on Stock Price’. (November).

Bellmann, Lutz, Olaf Hübler, and Ute Leber. 2018. *Works Councils, Training and Employee Satisfaction*. Institute of Labor Economics (IZA). https://EconPapers.repec.org/RePEc:iza:izadps:dp11871.

Benelli, Giuseppe, Claudio Loderer, and Thomas Lys. 1987. ‘Labor Participation in Corporate Policy-Making Decisions: West Germany’s Experience with Codetermination’. *The Journal of Business* 60(4): 553–75.

Berg, Florian, Julian Kölbel, and Roberto Rigobon. 2019. ‘Aggregate Confusion: The Divergence of ESG Ratings’. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=3438533 (March 27, 2022).

Bermig, Andreas, and Bernd Frick. 2010. ‘Board Size, Board Composition, and Firm Performance: Empirical Evidence from Germany’. *SSRN Electronic Journal*. http://www.ssrn.com/abstract=1623103 (April 10, 2022).

Berry, Daphne P. 2013. ‘Effects of Cooperative Membership and Participation in Decision Making on Job Satisfaction of Home Health Aides’. In *Advances in the Economic Analysis of Participatory & Labor-Managed Firms*, ed. Douglas Kruse. Emerald Group Publishing Limited, 3–25. https://www.emerald.com/insight/content/doi/10.1108/S0885-3339(2013)0000014002/full/html (April 10, 2022).

Bhattacherjee, Anol. 2012. *Social Science Research: Principles, Methods, and Practices*. Second edition. Tampa, Florida: Anol Bhattacherjee.

Billio, Monica et al. 2021. ‘Inside the ESG Ratings: (Dis)Agreement and Performance’. *Corporate Social Responsibility and Environmental Management* 28(5): 1426–45.

Blair, Margaret M. 1998. ‘For Whom Should Corporations Be Run?: An Economic Rationale for Stakeholder Management’. *Long Range Planning* 31(2): 195–200.

Blandhol, Christine, Magne Mogstad, Peter Nilsson, and Ola Vestad. 2020. *Do Employees Benefit from Worker Representation on Corporate Boards?* Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w28269.pdf (July 24, 2022).

Blinder, Alan S., ed. 1990. *Paying for Productivity: A Look at the Evidence*. Washington, D.C: Brookings Institution.

Boffo, R., and R. Patalano. 2020. 'ESG Investing: Practices, Progress and Challenges.' *OECD*.

Boneberg, Franziska. 2010. 'The Economic Consequences of One-Third Codetermination in German Supervisory Boards: First Evidence for the Service Sector from a New Source of Enterprise Data'. *University of Lüneburg, Institute of Economics*. https://ideas.repec.org/p/lue/wpaper/177.html.

Booth, Douglas E. 1995. 'Economic Democracy as an Environmental Measure'. *Ecological Economics* 12(3): 225–36.

Boubaker, Sabri, Douglas Cumming, and Duc Khuong Nguyen, eds. 2018. *Research Handbook of Finance and Sustainability*. Cheltenham ; Hampton MA, USA: Edward Elgar Publishing.

Bruque-Cámara, Sebastian, Jose Moyano Fuentes, Jesús M. Hernández-Ortiz, and Alfonso Vargas-Sánchez. 2003. 'Information Technology and Competitive Advantage: The Role of the Ownership Structure.'

Burdín, Gabriel. 2014. 'Are Worker-Managed Firms More Likely to Fail Than Conventional Enterprises? Evidence from Uruguay'. *ILR Review* 67(1): 202–38.

Burdín, Gabriel, and Andrés Dean. 2012. 'Revisiting the Objectives of Worker-Managed Firms: An Empirical Assessment'. *Economic Systems* 36(1): 158–71.

Carayannis, Elias G., David F. J. Campbell, and Evangelos Grigoroudis. 2021. 'Democracy and the Environment: How Political Freedom Is Linked with Environmental Sustainability'. *Sustainability* 13(10): 5522.

Card, David, Alexandre Mas, Enrico Moretti, and Emmanuel Saez. 2012. 'Inequality at Work: The Effect of Peer Salaries on Job Satisfaction'. *American Economic Review* 102(6): 2981–3003.

Cassel, Claes M., Peter Hackl, and Anders H. Westlund. 2000. 'On Measurement of Intangible Assets: A Study of Robustness of Partial Least Squares'. *Total Quality Management* 11(7): 897–907.

Castel, Davy, Claude Lemoine, and Annick Durand-Delvigne. 2011. 'Working in Cooperatives and Social Economy: Effects on Job Satisfaction and the Meaning of Work'. *Perspectives interdisciplinaires sur le travail et la santé* (13–2). http://journals.openedition.org/pistes/2635 (April 10, 2022).

Castronuovo, Celine. 2021. 'Companies Face Pressure to Promote Sustainable Products, Avoid "Green Washing"'. *The Hill*.

Chatterji, Aaron K., Rodolphe Durand, David I. Levine, and Samuel Touboul. 2016. 'Do Ratings of Firms Converge? Implications for Managers, Investors and Strategy Researchers: Do Ratings of Firms Converge?' *Strategic Management Journal* 37(8): 1597–1614.

Christensen, Dane M., George Serafeim, and Anywhere Sikochi. 2019. 'Why Is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings'. *The Accounting Review* 97(1): 147–75.

Clark, Andrew E. 1999. ‘Are Wages Habit-Forming? Evidence from Micro Data’. *Journal of Economic Behavior & Organization* 39(2): 179–200.

Clerc, Christophe. 2019. ‘STRUCTURE ET DIVERSITÉ DES MODÈLES ACTUELS DE GOUVERNEMENT D’ENTREPRISE’. http://rgdoi.net/10.13140/RG.2.2.34124.97925 (July 31, 2022).

Coase, R. H. 1937. ‘The Nature of the Firm’. *Economica* 4(16): 386–405.

Conchon, Aline. 2011. *Board-Level Employee Representation Rights in Europe: Facts and Trends*. Brussels: ETUI.

Cornelissen, Thomas, John S. Heywood, and Uwe Jirjahn. 2010. *Profit Sharing and Reciprocity: Theory and Survey Evidence*. Trier: Universität Trier, Fachbereich IV – Volkswirtschaftslehre. Research Papers in Economics. http://hdl.handle.net/10419/88672.

Cornell, Bradford. 2020. ‘ESG Investing: *Conceptual Issues*’. *The Journal of Wealth Management* 23(3): 61–69.

Crenshaw, Kimberlé Williams. 1989. ‘Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics’. *University of Chicago Legal Forum* 1989(1).

CRESS NPDC, and ConcertES. 2012. ‘Les Travailleurs Participent-Ils à La Gestion Des Entreprises ?’ *Les cahiers de l’observatoire transfrontalier de l’ESS* 4.

Debus, Malte. 2010. *Evaluation Des Aufsichtsrats: Theoretische Grundlagen Und Empirische Befunde*. Springer-Verlag.

Díaz-Serrano, Luís, and José António Cabral Vieira. 2005. ‘Low Pay, Higher Pay and Job Satisfaction within the European Union: Empirical Evidence from Fourteen Countries’. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=702889 (May 26, 2022).

Doeringer, Peter B., and Michael J. Piore. 1971. *Internal Labor Markets and Manpower Analysis*. Lexington, MA: Lexington.

Douglas, Elyse, Tracy Van Holt, and Tensie Whelan. 2017. ‘Responsible Investing: Guide to ESG Data Providers and Relevant Trends’. *Journal of Environmental Investing* 8(1): 91–114.

Doyle, Timothy. 2018. *Ratings That Don’t Rate: The Subjective World of ESG Ratings Agencies*. American Council for Capital Formation. https://accfcorpgov.org/wp-content/uploads/2018/07/ACCF_RatingsESGReport.pdf.

Drempetic, Samuel, Christian Klein, and Bernhard Zwergel. 2020. ‘The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review’. *Journal of Business Ethics* 167(2): 333–60.

Drost, Ellen A. 2011. ‘Validity and Reliability in Social Science Research’. *Education Research and Perspectives* 38(1): 105–23.

Estrin, Saul, Derek C Jones, and Jan Svejnar. 1987. 'The Productivity Effects of Worker Participation: Producer Cooperatives in Western Economies'. *Journal of Comparative Economics* 11(1): 40–61.

EU Commission. 'Corporate Sustainability Reporting'. https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

———. 'EU Taxonomy for Sustainable Activities'. https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en.

European Commission. 'Overview of Sustainable Finance'. https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en (August 14, 2022).

European Parliament Press Releases. 2021. *Democracy at Work: MEPs Want to Boost Workers' Representation*. European Parliament. https://www.europarl.europa.eu/news/en/press-room/20211216IPR19607/democracy-at-work-meps-want-to-boost-workers-representation.

Fairris, David, and Philippe Askenazy. 2010. 'Works Councils and Firm Productivity in France'. *Journal of Labor Research* 31(3): 209–29.

Fakhfakh, Fathi, and Felix FitzRoy. 2018. 'Is Profit Sharing Good for the Environment? Positive Evidence from French Firms'. *Journal of Participation and Employee Ownership* 1(2/3): 128–43.

Fancy, Tariq. 'August 2021 - The Secret Diary of a "Sustainable Investor"'. *Medium*. https://medium.com/@sosofancy/the-secret-diary-of-a-sustainable-investor-part-1-70b6987fa139.

Fauver, Larry, and Michael E. Fuerst. 2006. 'Does Good Corporate Governance Include Employee Representation? Evidence from German Corporate Boards'. *Journal of Financial Economics* 82(3): 673–710.

Favereau, Olivier. 2018. *Evaluation et Prospective Des Modèles Actuels de Gouvernance d'entreprise*.

Ferreras, Isabelle. 2017. *Firms as Political Entities: Saving Democracy through Economic Bicameralism*. 1st ed. Cambridge University Press. https://www.cambridge.org/core/product/identifier/9781108235495/type/book (May 29, 2022).

———. 2019. 'Shareholders Versus Stakeholders'. *Boston Review*. https://bostonreview.net/forum_response/isabelle-ferreras-shareholders-versus-stakeholders/.

FitzRoy, Felix, and Kornelius Kraft. 2005. 'Co-Determination, Efficiency and Productivity: Co-Determination, Efficiency and Productivity'. *British Journal of Industrial Relations* 43(2): 233–47.

FitzRoy, Felix R., and Kornelius Kraft. 1993. 'Economic Effects of Codetermination'. *The Scandinavian Journal of Economics* 95(3): 365.

Freeman, R. Edward, and David L. Reed. 1983. ‘Stockholders and Stakeholders: A New Perspective on Corporate Governance’. *California Management Review* 25(3): 88–106.

Freeman, Richard B., and Edward P. Lazear. 1995. ‘An Economic Analysis of Works Councils.’ In *Works Councils: Consultation, Representation, and Cooperation in Industrial Relations.*, University of Chicago Press, 27–52.

Frías-Aceituno, J.V., L. Rodríguez-Ariza, and I.M. García-Sánchez. 2013. ‘Is Integrated Reporting Determined by a Country’s Legal System? An Exploratory Study’. *Journal of Cleaner Production* 44: 45–55.

Frick, Bernd. 1996. ‘Co-Determination and Personnel Turnover: The German Experience’. *Labour* 10(2): 407–30.

Frick, Bernd, and I. Möller. 2003. ‘Mandated Works Councils and Firm Performance: Labor Productivity and Personnel Turnover in German Establishments’. *Schmollers Jahrbuch* 123: 423–54.

Friedman, Milton. 1970. ‘A Friedman Doctrine-- The Social Responsibility Of Business Is to Increase Its Profits’. *The New York Times*. https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html?te=1&nl=dealbook&emc=edit_dk_20200909&hlkid=f8ef9b8cc0df48079d30b4644b047186&hctky=11656490&hdpid=95233d2a-0a01-48c8-b704-022f559209cb.

Fuller, Joseph, and William Kerr. 2022. ‘The Great Resignation Didn’t Start with the Pandemic’. *Harvard Business Review*. https://hbr.org/2022/03/the-great-resignation-didnt-start-with-the-pandemic.

Genz, Sabrina, Lutz Bellmann, and Britta Matthes. 2019. ‘Do German Works Councils Counter or Foster the Implementation of Digital Technologies?: First Evidence from the IAB-Establishment Panel’. *Jahrbücher für Nationalökonomie und Statistik* 239(3): 523–64.

Ghirardello, Ariane, Amélie Seignour, and Corinne Vercher - Chaptal. 2018. *Les Performances de La Codétermination*. Collège des Bernardins.

Gorton, Gary, and Frank Schmid. 2000. *Class Struggle Inside the Firm: A Study of German Codetermination*. Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w7945.pdf (July 24, 2022).

Gorton, Gary, and Frank A. Schmid. 2004. ‘Capital, Labor, and the Firm: A Study of German Codetermination’. *Journal of the European Economic Association* 2(5): 863–905.

Gralla, Rafael, and Kornelius Kraft. 2018. ‘Separating Introduction Effects from Selectivity Effects: The Differences in Employment Patterns of Codetermined Firms’. *LABOUR* 32(1): 93–111.

Gregorič, Aleksandra, and Marc Steffen Rapp. 2019. ‘Board-Level Employee Representation (BLER) and Firms’ Responses to Crisis’. *Industrial Relations: A Journal of Economy and Society* 58(3): 376–422.

Grund, Christian, and Maike Rubin. 2017. ‘Social Comparisons of Wage Increases and Job Satisfaction’. *Applied Economics* 49(14): 1345–50.

Grund, Christian, and Andreas Schmitt. 2013. 'Works Councils, Wages and Job Satisfaction'. *Applied Economics* 45(3): 299–310.

Grund, Christian, and Dirk Sliwka. 2001. 'The Impact of Wage Increases on Job Satisfaction - Empirical Evidence and Theoretical Implications'. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=289100 (May 26, 2022).

Gyönyörová, Lucie, Martin Stachoň, and Daniel Stašek. 2021. 'ESG Ratings: Relevant Information or Misleading Clue? Evidence from the S&P Global 1200'. *Journal of Sustainable Finance & Investment*: 1–35.

Halbritter, Gerhard, and Gregor Dorfleitner. 2015. 'The Wages of Social Responsibility — Where Are They? A Critical Review of ESG Investing'. *Review of Financial Economics* 26(1): 25–35.

Harju, Jarkko, Simon Jäger, and Benjamin Schoefer. 2021. *Voice at Work*. Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w28522.pdf (July 24, 2022).

Hirsch, Boris, and Steffen Mueller. 2018. 'Firm Wage Premia, Industrial Relations, and Rent Sharing in Germany'. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=3157481 (July 24, 2022).

Hirsch, Boris, Thorsten Schank, and Claus Schnabel. 2010. 'Works Councils and Separations: Voice, Monopoly, and Insurance Effects: Works Councils and Separations'. *Industrial Relations: A Journal of Economy and Society* 49(4): 566–92.

Hubler, Olaf, and Uwe Jirjahn. 2003a. 'Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages'. *Scottish Journal of Political Economy* 50(4): 471–91.

———. 2003b. 'Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages'. *Scottish Journal of Political Economy* 50(4): 471–91.

'Human Development Index (HDI)'. https://hdr.undp.org/data-center/human-development-index#/indicies/HDI.

Huse, Morten, Sabina Tacheva Nielsen, and Inger Marie Hagen. 2009. 'Women and Employee-Elected Board Members, and Their Contributions to Board Control Tasks'. *Journal of Business Ethics* 89(4): 581–97.

International Labour Organisation (ILO). 2001. 'National Labour Law Profile: Federal Republic of Germany'. https://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS_158899/lang--en/index.htm.

Jäger, Simon, Shakked Noy, and Benjamin Schoefer. 2021. 'What Does Codetermination Do?' *ILR Review*: 001979392110657.

Jäger, Simon, Benjamin Schoefer, and Jörg Heining. 2021. 'Labor in the Boardroom'. *The Quarterly Journal of Economics* 136(2): 669–725.

Jensen, Michael C., and William H. Meckling. 1976. 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure'. *Journal of Financial Economics* 3(4): 305–60.

———. 1979. ‘Rights and Production Functions: An Application to Labor-Managed Firms and Codetermination’. *The Journal of Business* 52(4): 469.

Jirjahn, U. 2010. ‘Works Councils and Employment Growth in German Establishments’. *Cambridge Journal of Economics* 34(3): 475–500.

Jirjahn, Uwe. 2011. ‘Gender, Worker Representation and the Profitability of Firms in Germany’. *European Journal of Comparative Economics* 8(2): 281–98.

———. 2014. *Works Councils and Collective Bargaining in Germany: A Simple but Crucial Theoretical Extension*. University of Trier, Department of Economics. https://EconPapers.repec.org/RePEc:trr:wpaper:201413.

———. 2016. *Works Councils and Employer Attitudes toward the Incentive Effects of HRM Practices*. University of Trier, Department of Economics. https://EconPapers.repec.org/RePEc:trr:wpaper:201607.

Jirjahn, Uwe, and Jens Mohrenweiser. 2019. ‘Works Councils and Organizational Gender Policies in Germany’. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=3390338 (April 10, 2022).

Jirjahn, Uwe, Jens Mohrenweiser, and Stephen C Smith. 2021. ‘Works Councils and Workplace Health Promotion in Germany’. *Economic and Industrial Democracy*: 0143831X2097105.

Jirjahn, Uwe, and Stephen C. Smith. 2018. ‘NONUNION EMPLOYEE REPRESENTATION: THEORY AND THE GERMAN EXPERIENCE WITH MANDATED WORKS COUNCILS: THEORY AND GERMAN EXPERIENCE WITH MANDATED WORK COUNCILS’. *Annals of Public and Cooperative Economics* 89(1): 201–33.

Kammerlander, Andreas, and Günther G Schulze. 2021. ‘Political-Economic Correlates of Environmental Policy *’. *Environmental Research Letters* 16(2): 024047.

Kaswan, Mark J. 2019. ‘Happiness Theory and Worker Cooperatives: A Critique of the Alignment Thesis’. *Journal of Labor and Society* 22(3): 637–60.

Kato, Takao, and Motohiro Morishima. 2002. ‘The Productivity Effects of Participatory Employment Practices: Evidence from New Japanese Panel Data’. *Industrial Relations: A Journal of Economy and Society* 41(4): 487–520.

Kees Looise, Jan, Nicole Torka, and Jan Ekke Wigboldus. 2011. ‘Understanding Worker Participation and Organizational Performance at the Firm Level: In Search for an Integrated Model’. In *Advances in Industrial and Labor Relations*, eds. David Lewin, Bruce E. Kaufman, and Paul J. Gollan. Emerald Group Publishing Limited, 87–113. https://www.emerald.com/insight/content/doi/10.1108/S0742-6186(2011)0000018006/full/html (April 10, 2022).

Keskinen, Maija. 2017. ‘Workplace Cooperation and Firm Performance–Evidence from Finland’. Aalto University.

Kim, E. Han, Ernst G. Maug, and Christoph Schneider. 2014. ‘Labor Representation in Governance as an Insurance Mechanism’. *SSRN Electronic Journal*. http://www.ssrn.com/abstract=2399399 (July 24, 2022).

Kotsantonis, Sakis, and George Serafeim. 2019. 'Four Things No One Will Tell You About ESG Data'. *Journal of Applied Corporate Finance* 31(2): 50–58.

Kraft, K., J. Stank, and R. Dewenter. 2011. 'Co-Determination and Innovation'. *Cambridge Journal of Economics* 35(1): 145–72.

Kraft, Kornelius. 2001. 'Codetermination as a Strategic Advantage?' *International Journal of Industrial Organization* 19(3–4): 543–66.

———. 2006. 'On Estimating the Effect of Co-Determination on Personnel Turnover'. *Schmollers Jahrbuch : Journal of Applied Social Science Studies / Zeitschrift für Wirtschafts- und Sozialwissenschaften* 126(2): 287–305.

Kraft, Kornelius, and Jörg Stank. 2004. 'Die Auswirkungen Der Gesetzlichen Mitbestimmung Auf Die Innova-Tionsaktivität Deutscher Unternehmen'. *Schmollers Jahrbuch : Journal of Applied Social Science Studies / Zeitschrift für Wirtschafts- und Sozialwissenschaften* 124(3): 421–49.

Landemore, Hélène, and Isabelle Ferreras. 2016. 'In Defense of Workplace Democracy: Towards a Justification of the Firm–State Analogy'. *Political Theory* 44(1): 53–81.

Laudage, Sabine. 2015. 'Part-Time Work and Family Building in OECD Countries'. *CESifo DICE REPORT - Journal for Institutional Comparisons* 13(1).

Levin, Henry M. 2006. 'Worker Democracy and Worker Productivity'. *Social Justice Research* 19(1): 109–21.

Liang, Hao, and Luc Renneboog. 2020. 'Corporate Social Responsibility and Sustainable Finance: A Review of the Literature'. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=3698631 (July 31, 2022).

Lindbeck, Assar, and Dennis J. Snower. 1988. *The Insider-Outsider Theory of Employment and Unemployment*. Cambridge London: the MIT press.

Long, Richard J. 1980. 'Job Attitudes and Organizational Performance Under Employee Ownership'. *Academy of Management Journal* 23(4): 726–37.

Masters, Brooke. 2022. 'BlackRock Warns It Will Vote against More Climate Resolutions This Year'. *Financial Times*. https://www.ft.com/content/4a538e2c-d4bb-4099-8f15-a28d0fefcea2.

Méda, Dominique, Julie Battilana, and Isabelle Ferreras. 2020. *Le Manifeste Travail: Démocratiser, Démarchandiser, Dépolluer.* Paris, France: Editions du Seuil.

Mitchell, Terence R. 1973. 'Motivation and Participation: An Integration'. *Academy of Management Journal* 16(4): 670–79.

Mohajan, Haradhan. 2017. 'Two Criteria for Good Measurements in Research: Validity and Reliability.' *Annals of Spiru Haret University Economics Series* 4.

Morishima, Motohiro. 1991. 'Information Sharing and Collective Bargaining in Japan: Effects on Wage Negotiation'. *ILR Review* 44(3): 469–85.

Mueller, Steffen. 2012. 'Works Councils and Establishment Productivity'. *ILR Review* 65(4): 880–98.

———. 2015. ‘Works Councils and Labour Productivity: Looking beyond the Mean: Works Councils and the Labour Productivity Distribution’. *British Journal of Industrial Relations* 53(2): 308–25.

Mueller, Steffen, and Jens Stegmaier. 2017. ‘The Dynamic Effects of Works Councils on Labour Productivity: First Evidence from Panel Data: Dynamic Effects of Works Councils on Labour Productivity’. *British Journal of Industrial Relations* 55(2): 372–95.

Müller, Steffen, and Georg Neuschäffer. 2020. ‘Worker Participation in Decision-Making, Worker Sorting, and Firm Performance’. *IWH Discussion Papers* No. 11/2020.

NLRA. 1935. ‘National Labor Relations Act (NLRA) - [Title 29, Chapter 7, Subchapter II, United States Code]’. https://www.nlrb.gov/guidance/key-reference-materials/national-labor-relations-act.

O’Boyle, Ernest H., Pankaj C. Patel, and Erik Gonzalez-Mulé. 2016. ‘Employee Ownership and Firm Performance: A Meta-Analysis: Employee Ownership: A Meta-Analysis’. *Human Resource Management Journal* 26(4): 425–48.

Olmedo, Elena Escrig, Maria Jesus Munoz Torres, and Maria Angeles Fernandez Izquierdo. 2010. ‘Socially Responsible Investing: Sustainability Indices, ESG Rating and Information Provider Agencies’. *International Journal of Sustainable Economy* 2(4): 442.

Organisation for Economic Co-operation and Development Staff. 2002. *OECD Employment Outlook, June 2002.* Washington: Organization for Economic Cooperation & Development. https://doi.org/10.1787/empl_outlook-2002-en (July 31, 2022).

Pérez, Gorka R. 2022. ‘Trabajo pretende “democratizar” las empresas con la entrada de empleados en los consejos de administración’. *El Pais*. https://elpais.com/economia/2022-05-04/trabajo-pretende-democratizar-las-empresas-con-la-entrada-de-empleados-en-los-consejos-de-administracion.html.

Petry, Stefan. 2009. ‘The Wealth Effects of Labor Representation on the Board: Evidence from German Codetermination Legislation.’ *Judge Business School, Cambridge University. Working Paper*.

Polanyi, Karl. 2001. *The Great Transformation: The Political and Economic Origins of Our Time*. 2nd Beacon Paperback ed. Boston, MA: Beacon Press.

Portail du Droit Belge. ‘Syndicats et représentation des travailleurs au sein de l’entreprise’. http://www.droitbelge.be/fiches_detail.asp?idcat=25&id=492.

RCS: Nanterre, Code greffe: 9201. 2022. *Registre Du Commerce et Des Sociétés - Actes Des Sociétés*. Nanterre.

Renaud, Simon. 2007. ‘Dynamic Efficiency of Supervisory Board Codetermination in Germany’. *Labour* 21(4–5): 689–712.

Rengo SRL. 2021. 21362215 *STATUTS (TRADUCTION, COORDINATION, AUTRES MODIFICATIONS), CAPITAL, ACTIONS*. http://www.ejustice.just.fgov.be/tsv_pdf/2021/10/20/21362215.pdf.

République Française. ‘Code Du Travail Numérique - Droit Du Travail’. https://code.travail.gouv.fr/droit-du-travail.

Rogers, Joel, and Wolfgang Streeck, eds. 1995. *Works Councils: Consultation, Representation, and Cooperation in Industrial Relations*. Chicago, Ill: University of Chicago Press.

Schmid, Frank A., and Frank Seger. 1998. ‘Arbeitnehmermitbestimmung, Allokation von Entscheidungsrechten Und Shareholder Value’. *Journal of Business Economics* 68(5).

Schnabel, Claus. 2020. ‘Betriebliche Mitbestimmung in Deutschland: Verbreitung, Auswirkungen Und Implikationen’. *Perspektiven der Wirtschaftspolitik* 21(4): 361–78.

Scholz, Robert, and Sigurt Vitols. 2019. ‘Board-Level Codetermination: A Driving Force for Corporate Social Responsibility in German Companies?’ *European Journal of Industrial Relations* 25(3): 233–46.

Scruggs, Lyle A. 1999. ‘Institutions and Environmental Performance in Seventeen Western Democracies’. *British Journal of Political Science* 29(1): 1–31.

Seawright, Jason, and John Gerring. 2008. ‘Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options’. *Political Research Quarterly* 61(2): 294–308.

Sen, Amartya. 1993. ‘Positional Objectivity’. *Philosophy & Public Affairs* 22(2): 126–45.

Sherman, Natalie. 2022. ‘Amazon Workers Win Battle to Form First US Union’. *BBC*. https://www.bbc.com/news/business-60944677.

Smith, Stephen C. 2006. ‘Employee Participation Rights in Corporate Governance: An Economic Rationale, a Test of a Leading Theory, and Some Initial Policy Proposals’. In *Advances in the Economic Analysis of Participatory & Labor-Managed Firms*, Bingley: Emerald (MCB UP), 105–46. https://www.emerald.com/insight/content/doi/10.1016/S0885-3339(05)09004-6/full/html (April 10, 2022).

‘Supervisory Board Members - Employee Representatives’. https://www.bauer.de/bauer_group/bauer_group/organs/supervisory_board/ (August 14, 2022).

Svejnar, Jan. 1982. ‘On the Theory of a Participatory Firm’. https://academiccommons.columbia.edu/doi/10.7916/D8NS0V23 (July 24, 2022).

Tekleab, Amanuel G., and M. Susan Taylor. 2003. ‘Aren’t There Two Parties in an Employment Relationship? Antecedents and Consequences of Organization-Employee Agreement on Contract Obligations and Violations’. *Journal of Organizational Behavior* 24(5): 585–608.

‘Temporary Employment’. https://www.oecd-ilibrary.org/employment/temporary-employment/indicator/english_75589b8a-en (July 31, 2022).

The Economist Intelligence Unit. 2021. *Democracy Index 2020 In Sickness and in Health?* The Economist.

Torka, Nicole, Jan Kees Looise, and Stefan Zagelmeyer. 2011. 'Ordinary Atypical Workers, Participation within the Firm and Innovation: A Theoretical Endeavor and Empirical Outlook'. *management revue. Socio-economic Studies* 22(3): 221–39.

U.S. Securities and Exchange Commission. 2022. 'Press Release - SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors'. https://www.sec.gov/news/press-release/2022-46.

Van Den BERG, Annette, Yolanda Grift, and Arjen Van WITTELOOSTUIJN. 2011. 'Managerial Perceptions of Works Councils' Effectiveness in the Netherlands: *Managerial Perceptions of Works Councils*'. *Industrial Relations: A Journal of Economy and Society* 50(3): 497–513.

Wagner, Joachim. 2009. 'One-Third Codetermination at Company Supervisory Boards and Firm Performance in German Manufacturing Industries: First Direct Evidence from a New Type of Enterprise Data'. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=1455514 (July 24, 2022).

———. 2011. 'One-Third Codetermination at Company Supervisory Boards and Firm Performance in German Manufacturing Industries: First Direct Evidence from a New Type of Enterprise Data'. *Schmollers Jahrbuch: Zeitschrift für Wirtschafts- und Sozialwissenschaften /Journal of Applied Social Science Studies* 131(1): 91–106.

Walter, Ingo. 2020. 'Sense and Nonsense in ESG Ratings'. *SSRN Electronic Journal*. https://www.ssrn.com/abstract=3568104 (March 27, 2022).

Wang, Fuxi. 2018. 'The Perceived Effectiveness of Democratic Management, Job Performance, and Citizenship Behavior: Evidence from a Large Chinese State-Owned Petrochemical Company'. *Frontiers of Business Research in China* 12(1): 13.

Wilkinson, Adrian, Jimmy Donaghey, Tony Dundon, and Richard B. Freeman, eds. 2020. *Handbook of Research on Employee Voice*. Second edition. Cheltenham, UK ; Northampton, MA, USA: Edward Elgar Publishing.

Wilkinson, Adrian, Paul J. Gollan, Senia Kalfa, and Ying Xu. 2018. 'Voices Unheard: Employee Voice in the New Century'. *The International Journal of Human Resource Management* 29(5): 711–24.

Winston, Andrew. 2021. 'Sustainable Business Went Mainstream in 2021'. *Harvard Business Review*. https://hbr.org/2021/12/sustainable-business-went-mainstream-in-2021.

Wolf, Elke, and Thomas Zwick. 2008. 'Reassessing the Productivity Impact of Employee Involvement and Financial Incentives'. *Schmalenbach Business Review (sbr), LMU Munich School of Management* 60(2): 160–81.

Wood, Stephen, and Lilian M. de Menezes. 2011. 'High Involvement Management, High-Performance Work Systems and Well-Being'. *The International Journal of Human Resource Management* 22(7): 1586–1610.

XIAOYANG, ZHU, and ANITA CHAN. 2005. 'Staff and Workers' Representative Congress: An Institutionalized Channel for Expression of Employees' Interests?' *Chinese Sociology & Anthropology* 37(4): 6–33.

Yongjun Tang, Dragon, Jiali Yan, and Yaqiong Yao. 2021. 'The Determinants of ESG Ratings: Rater Ownership Matters'.

Appendix

I gathered all studies which I analysed regarding the strictly economic factors and their findings in the table below.

Table 22 - Firm Democracy & Strictly Economic Factors - Overview

Reference	**Democratic Implementation**	**Effect Studied**	**Links with Causal Mechanisms**	**Location**	**Findings**
(O'Boyle, Patel, and Gonzalez-Mulé 2016)	Employee Ownership	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	NA.	Small yet positive and statistically significant effect.
(Agirre, Reinares, and Freundlich 2015)	Employee Ownership (i.e. Cooperatives)	Organisational commitment & business performance.	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Spain.	Increase in organizational commitment and business performance.
(Jäger, Schoefer, and Heining 2021)	BLER	Profitability, firm survival, revenue.	Indifferent/Support: Information-sharing & long-term thinking. Indifferent/Reject: Slower decision-making & worker hold-up.	Germany & Finland	Zero or even slightly positive (statistically insignificant) effect.
(Harju, Jäger, and Schoefer 2021)	BLER	Profitability, firm survival, revenue.	Indifferent/Support: Information-sharing & long-term thinking. Indifferent/Reject: Slower decision-making & worker hold-up.	Germany & Finland.	Zero or even slightly positive (statistically insignificant) effect.
(Fauver and Fuerst 2006)	BLER	Company efficiency (payment of dividends & concentration of ownership)	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany.	Positive effect & Higher positive effect of one-third BLER compared to parity BLER on shareholder value.
(Kornelius Kraft 2006)	Parity BLER	Return on equity.	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive effect.
(Debus 2010)	BLER	Company survival & Return on Assets	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive effect of both one-third parity BLER.
Vulcheva (2008)	BLER	Reliable Accounting	Support: Information-sharing & long-term thinking.	Germany	Positive effect.

			Reject: Slower decision-making & worker hold-up.		
(Balsmeier et al. 2011)	BLER	Company performance: Tobin's Q & market-to-book value	Supports both positive and negative causal mechanisms: Information-sharing; long-term thinking; slower-decision-making, and worker hold-up.	Germany	Positive effect until the voting power of employees reaches a threshold value between 41%and 46%. Declining effect thereafter.
(Renaud 2007)	Parity BLER	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive effect of the change from one-third to parity BLER.
(Uwe Jirjahn and Smith 2018)	Workers' councils	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive association.
(Müller and Neuschäffer 2020)	Workers' councils	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive association.
(Schnabel 2020)	Workers' councils	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive association
(Jäger, Noy, and Schoefer 2021)	Workers' councils	Profitability, Wages	Indifferent/Support: Information-sharing & long-term thinking. Indifferent/Reject: Slower decision-making & worker hold-up.	Germany	Zero or small positive effects
(U. Jirjahn 2010)	Workers' councils	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive effects
(Morishima 1991)	Workers' councils	Profitability	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Japan	Positive effects between committee effectiveness and enterprise profitability.
(Burdín 2014)	BLER	Firm survival	Support: Information-sharing & long-term thinking.	Uruguay	The hazard of dissolution is 29% lower compared to conventional firms.

			Reject: Slower decision-making & worker hold-up.		
(J. Addison, Schnabel, and Wagner 2001)	Workers' councils	Profitability	Support: Slower decision-making & worker hold-up. Reject: Information-sharing & long-term thinking.	Germany	Associated with lower profitability.
(J. T. Addison and Teixeira 2003)	Workers' councils & Flexibility	Profitability & Revenues	Support: Information-sharing & long-term thinking. Reject: Slower decision-making & worker hold-up.	Germany	Positive effects
(J. T. Addison 2009)	BLER & Workers' councils	Profitability	Difficult to say.	Germany	Mixed results.
(Frick and Möller 2003)	Works Councils	Productivity & Profitability.		Germany	Positive effects
(Benelli, Loderer, and Lys 1987)	BLER	Profitability.	No support for any mechanism.	Germany	No significant effect.
(Kornelius Kraft 2001)	Parity BLER	Price-Cost margin.	No support for any mechanism.	Germany	No significant effect.
Vitols (2006)	Parity BLER	Return on equity & market capitalization	No support for any mechanism.	Germany	No significant effect of Parity BLER compared to one-third BLER.
(Baums and Frick 1995)	Parity BLER	Share price at industry-level	No support for any mechanism.	Germany	No significant effect.
(Wagner 2009)	One-third BLER	Profitability	No support for any mechanism.	Germany	No significant effect compared to companies without BLER.
(Bermig and Frick 2010)	BLER	Return on equity & market capitalization	No support for any mechanism.	Germany	No significant effect
Wagner (2011)	BLER	Profitability	No support for any mechanism.	Germany	No significant effect.
(Keskinen 2017)	Workers' councils	Profitability	No support for any mechanism.	Finland	No significant effect.
(F. FitzRoy and Kraft 2005)	Parity BLER	Profitability	Support: Slower decision-making & worker hold-up. Reject: Information-sharing & long-term thinking.	Germany	Negative effect on profitability.
(Gorton and Schmid 2004) ; (Gorton and	Parity BLER	Return on Equity	Support: Slower decision-making & worker hold-up.	Germany	Negative effect when compared to one-third BLER.

Schmid 2000)			Reject: Information-sharing & long-term thinking.		
(Schmid and Seger 1998)	Parity BLER	Shareholder value	Support: Slower decision-making & worker hold-up. Reject: Information-sharing & long-term thinking.	Germany	Negative effect when compared to one-third BLER.
(Petry 2009)	Parity BLER	Stock price	Support: Slower decision-making & worker hold-up. Reject: Information-sharing & long-term thinking.	Germany	Negative effect.
(Boneberg 2010)	BLER	Profitability	No support for any mechanism.	Germany	No significant effect.
(Jensen and Meckling 1979)	Workers' councils	Efficiency	No support for any mechanism.	Germany	No significant effect
(Kees Looise, Torka, and Ekke Wigboldus 2011)	Workers' councils	Economic performance	Difficult to say.	Germany& UK	Improved economic performance is found in non-union British firms. By contrast, unionized plants in the UK are associated with negative results. In Germany the results are positive for large establishments and negative for smaller plants.

I gathered all studies which I analysed regarding productivity and their findings in the table below.

Table 23 - Firm Democracy & Productivity – Overview.

Reference	**Democratic Implementation**	**Effect Studied**	**Links with Causal Mechanisms**	**Location**	**Findings**
(Jäger, Schoefer, and Heining 2021)	BLER	Productivity.	Reject: Slower decision-making & Worker hold-up.	Germany & Finland	Zero or even slightly positive (statistically insignificant) effect.
(Harju, Jäger, and Schoefer 2021)	BLER	Productivity.	Reject: Slower decision-making & Worker hold-up.	Germany & Finland.	Zero or even slightly positive (statistically insignificant) effect.
(Uwe Jirjahn and Smith 2018)	Workers' councils	Productivity.	Reject: Slower decision-making & Worker hold-up.	Germany	Positive association.
(Müller and Neuschäffer 2020)	Workers' councils	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Positive association.
(Schnabel 2020)	Workers' councils	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Positive association
(Jäger, Noy, and Schoefer 2021)	Workers' councils	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Zero or small positive effects

(Wagner 2011)	BLER	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	No significant effect.
(Wagner 2009)	BLER	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	No significant effect.
(Boneberg 2010)	BLER	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Positive effect due to a positive effect on the wage level.
(J. Addison, Schnabel, and Wagner 2001)	Workers' councils	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Association with higher productivity (in higher establishments only).
Gurdon & Ray (1990)	BLER	Productivity	Support: Slower decision-making & Worker hold-up.	Germany	Negative effect
(F. R. FitzRoy and Kraft 1993)	BLER	Productivity	Support: Slower decision-making & Worker hold-up.	Germany	Negative effect.
(F. FitzRoy and Kraft 2005)	Parity BLER	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Slightly positive effects compared to one-third BLER.
(Renaud 2007)	Parity BLER	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Significantly positive effect.
(Kato and Morishima 2002)	Board Representation	Productivity	Reject: Slower decision-making & Worker hold-up.	Japan	Significant 8-9 percent increase in productivity.
(Smith 2006)	Workers' councils	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Slight positive effect.
(U. Jirjahn 2010)	Workers' councils	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Positive effect if there is profit-sharing and collective bargaining coverage.
(Mueller 2012)	Workers'council	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	6.4% positive effect on average.
(Wolf and Zwick 2008)	Workers'council	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Slight positive effect.
(Mueller and Stegmaier 2017)	Workers'council	Productivity	May support: Long-term thinking. Reject: Slower decision-making & Worker hold-up.	Germany	Long-run positive effect (i.e. on average 11%).
(Mueller 2015)	Workers'council	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Positive effect.
(Levin 2006)	Workers'council	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	Positive effect
(Estrin, Jones, and Svejnar 1987)	Employee Ownership (i.e. Cooperative)	Productivity	Mixed results.	Germany	Positive effect from profit-sharing, but negative effect from collective capital ownership.
(Svejnar 1982)	BLER	Productivity	Reject: Slower decision-making & Worker hold-up.	Germany	No significant effect.
(Fairris and Askenazy 2010)	Workers'council	Productivity	Reject: Slower decision-making & Worker hold-up.	France	No effect.
(Blinder 1990)	Worker participation	Productivity	Reject: Slower decision-making & Worker hold-up.	USA	No effect
(Cornelissen, Heywood, and Jirjahn 2010)	Profit-sharing	Productivity	Difficult to say due to the time element.	Germany	Reciprocity increases profit up to a point but decreases it after that.

I gathered all studies which I analysed regarding innovation and their findings in the table below.

Table 24 - Firm Democracy & Innovation - Overview

Reference	Democratic Implementation	Effect Studied	Links with Causal Mechanisms	Location	Findings
(J. Addison, Schnabel, and Wagner 2001)	Workers' councils	Innovation	Support: Information-sharing & Long-term thinking. Reject: Worker Hold-up.	Germany	No reduction in innovative activity.
(Kornelius Kraft and Stank 2004)	Parity BLER	Innovation from the number of patents filed.	Support: Information-sharing & Long-term thinking. Reject: Worker Hold-up.	Germany	Slight positive effect.
(Genz, Bellmann, and Matthes 2019)	Workers' councils	Implementation of digital technology	Difficult to say.	Germany	The existence of workers' councils is associated with lower equipment levels with digital technologies. However, the presence of workers' councils is associated with an encouragement of equipment with digital technologies.
(Torka, Looise, and Zagelmeyer 2011)	Participatory Management	Innovation		Germany	Participation within the firm is key to enable ordinary workers to contribute to innovation.
(Van Den BERG, Grift, and Van WITTELOOSTUIJN 2011)	Workers' councils	Management's perception of innovation		Netherlands	Workers'council plays a significant role in making the management appreciative of its contribution to innovation.
(K. Kraft, Stank, and Dewenter 2011)	BLER	Innovation (i.e. number of patents granted)		Germany	No significant effect.
(J. T. Addison et al. 2007)	Workers' councils	Capital Investment		Germany	No significant effect.
(U. Jirjahn 2010)	Workers' councils	Innovative activity		Germany	No significant effect.

I gathered all studies which I analysed regarding hiring & firing and their findings in the table below.

Table 25 - Firm Democracy & Hiring-Firing - Overview

Reference	Democratic Implementation	Effect Studied	Location	Findings
(Kornelius Kraft 2006)	Workers' councils	Dismissal rate	Germany	Ambiguous results.
(Jäger, Noy, and Schoefer 2021)	Workers' councils & BLER	Dismissal rate	Finland	
(Frick 1996)	Workers' councils	Dismissal rate	Germany	Firms with a workers'council have an annual dismissal rate which is 1.6 percentage points lower.
(Hirsch, Schank, and Schnabel 2010)	Workers' councils	Dismissal rate	Germany	Lower rate of dismissals.
(U. Jirjahn 2010)	Workers' councils	Employment growth	Germany	Positive employment growth.
(Gregorič and Rapp 2019)	BLER	Dismissal rate	Scandinavian countries	Lower dismissal rates.
(Kim, Maug, and Schneider 2014)	BLER	Dismissal rate	Germany	Lower dismissal rates.
(Keskinen 2017)	Workers' councils	Dismissal rate	Finland	Lower dismissal rate
(Gralla and Kraft 2018)	Workers' councils	Hiring rate	Germany	
(Harju, Jäger, and Schoefer 2021)	BLER & Workers' councils	Dismissal rate	Finland	2% lower dismissal rate with BLER, but no effect with Workers' councils.
(Burdín and Dean 2012)	Workers' councils	Hiring rate	Uruguay	Higher hiring rates.

I gathered all studies which I analysed regarding wage levels and their findings in the table below.

Table 26 - Firm Democracy & Wage levels - Overview

Reference	Democratic Implementation	Effect Studied	Location	Findings
(Kim, Maug, and Schneider 2014)	BLER	Wage levels	Germany	Negative effects on wage levels in times of crises.
(Grund and Schmitt 2013)	Workers' councils	Wage levels	Germany	No effect on wage levels.
(Jäger, Schoefer, and Heining 2021)	BLER	Wage levels	Germany	No effect on wage levels.
(Jäger, Noy, and Schoefer 2021)	Workers' councils	Wage levels	Germany	Moderate positive effects on wages.
(Blandhol et al. 2020)	BLER & Workers' councils	Wage levels	Norway	Zero wage effects from BLER, and at best a small positive effect from Workers' councils.
(Keskinen 2017)	Workers' councils	Wage levels	Finland	No effect on wages.
(Harju, Jäger, and Schoefer 2021)	BLER & Workers' councils	Wage levels	Finland	Statistically insignificant positive effect on wages.

(Uwe Jirjahn and Smith 2018)	Workers' councils	Wage levels, within-firm inequality.	Germany	Positive effect on wage levels and reduction of within-firm inequality.
(Hirsch and Mueller 2018)	Workers' councils	Wage levels, within-firm inequality.	Germany	Positive effect on wage levels and reduction of within-firm inequality.
(Schnabel 2020)	Workers' councils	Wage levels, within-firm inequality.	Germany	Positive effect on wage levels and reduction of within-firm inequality.
(Hubler and Jirjahn 2003b)-a	Workers' councils	Wage levels	Germany	High wage levels, particularly in establishments uncovered by industrial regimes of collective bargaining.
(Uwe Jirjahn 2014) - b	Workers' councils	Wage levels	Germany	
(J. T. Addison, Teixeira, and Zwick 2010)	Workers' councils	Wage levels	Germany	High wage levels, particularly in establishments uncovered by industrial regimes of collective bargaining.
(Gregorič and Rapp 2019)	BLER	Wage levels	Scandinavian countries	Negative effects on wage levels in times of crises.
(Uwe Jirjahn 2016)	Workers' councils	Wage levels, promotions, employee training, and manager perception.	Hanover, Germany.	Positive effect on wage levels, promotion levels, training levels.

I gathered all studies which I analysed regarding job satisfaction and their findings in the table below.

Table 27 - Firm Democracy & Job Satisfaction - Overview

Reference	**Democratic Implementation**	**Effect Studied**	**Location**	**Findings**
(Wood and de Menezes 2011)	Employee voice	Job satisfaction & wellbeing	UK	Positive effect on job satisfaction.
(Uwe Jirjahn 2016)	Workers' councils	Wage levels, promotions, employee training, and manager perception.	Hanover, Germany.	Positive effect on wage levels, promotion levels, training levels.
(Grund and Schmitt 2013)	Workers' councils	Job satisfaction & wage levels	Germany	Positive effect on subjective job satisfaction, and small positive effects on wage levels.
(Harju, Jäger, and Schoefer 2021)	BLER & Workers' councils	Subjective job satisfaction, sick leave numbers, voluntary & involuntary job quitting.	Finland	Positive effect coming from BLER and workers' councils on subjective job satisfaction. No effect on voluntary job separation, but a 2% negative effect on involuntary separations.
(Adam 2018)	Workers' councils change in authority	Voluntary job separation.	Germany	Reduction of voluntary employment quits by 30%
(Jäger, Noy, and Schoefer 2021)	BLER & Workers' councils	Voluntary job separation, job security, health,	Finland	Small positive effects of democratisation on all outcomes.

		subjective job quality, wages.		
(Berry 2013)	Worker ownership	Subjective job satisfaction.	USA.	Positive effects on job satisfaction in worker-owned facilities.
(Castel, Lemoine, and Durand-Delvigne 2011)	Worker ownership	Subjective jog satisfaction	France	Positive effects associated with worker ownership.
(Bellmann, Hübler, and Leber 2018)	Workers' councils	Training levels	Germany	Weakly statistically significant positive effects with employee training levels.
(Uwe Jirjahn, Mohrenweiser, and Smith 2021)	Workers' councils	Workplace health promotion	Germany	Positive association between workers' councils and workplace health promotion.
(Arnold, Brändle, and Goerke 2018)	Workers' councils	Sick leave	Germany	Higher sick leave in German firms with workers' councils.

I gathered all studies which I analysed regarding gender diversity and their findings in the table below.

Table 28 - Firm Democracy & Gender Diversity - Overview

Reference	**Democratic Implementation**	**Effect Studied**	**Location**	**Findings**
(Uwe Jirjahn 2011)	Workers' councils	Wage levels & gender wage gap	Germany	Reduction of gender wage gap with the presence of workers' councils.
(Huse, Nielsen, and Hagen 2009).	BLER	Wage inequality and firm efficiency.	Norway	Reduction of gender wage inequality and increase of firm efficiency with BLER.
(Uwe Jirjahn and Mohrenweiser 2019)	Workers' councils	Family-friendly policies and equal opportunities.	Germany.	Higher incidence of family-friendly practices and equal opportunities associated with workers' councils.
(Gartner and Stephan 2005)	Workers' councils	Gender wage gap	Germany	Reduction in gender wage gap with workers' councils.
(Grund and Schmitt 2013)	Workers' councils	Wage levels and job satisfaction.	Germany	No effect on wage levels, but positive effects of workers' councils on job satisfaction.

I gathered all studies which I analysed regarding environmental performance and their findings in the table below.

Table 29 - Firm Democracy & Environmental Performance - Overview

Reference	**Democratic Implementation**	**Effect Studied**	**Location**	**Methodological Choice**	**Findings**
(Booth 1995)	Cooperative: full worker-ownership.	Efficiency of natural resource use and growth orientation.	NA	Meta-analysis of comparative case studies.	Cooperatives tend to use natural resources more efficiently, and are less growth-oriented.

(Fakhfakh and FitzRoy 2018)	Financial Participation: profit-sharing.	Environmental innovation.	France	Cross-sectional data from the Community Innovation Survey.	Profit-sharing is associated with higher innovations in environmental topics.
(Askildsen, Jirjahn, and Smith 2006)	Workers' councils	Local environmental protection investments.	Germany	German panel data.	The presence of workers' councils is associated with higher environmental protection.
(Scholz and Vitols 2019)	BLER	Symbolic CSR policies: UN Global compact membership; and substantive CSR policies: adoption of targets for reducing pollution.	Germany	DAX, MDAX , SDAX, and TechDAX indices with 160 companies in total.	No relationship with 'symbolic' CSR policies, but a positive relationship with substantive CSR policies.