Information Transmission in Finance:
Essays on Commodity Markets, Sustainable Investing, and Social Networks
Information Transmission in Finance:
Essays on Commodity Markets, Sustainable Investing, and Social Networks

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In memory of my aunt and uncle
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Chapter 1

Introduction

The nature of information transmission within economic systems and financial markets is an important determinant of human decision-making and economic outcomes (e.g., Hayek (1945), Stiglitz (2000), Hirshleifer (2020)). Information is often dispersed in society and aggregated into various forms such as prices, ratings, and socially transmitted ideas. All these forms of information are then used as decision-making inputs by economic agents.

For example, an increase in the price of a commodity might tell thousands of producers that it is time to use a cheaper alternative as a production input. Alternatively, the same price increase might be due to the strengthening of the global economy and, therefore, a signal that production should increase to meet rising global demand. Similarly, an idea that travels through social networks might lead investors to buy a certain stock or influence the decision of
managers to change corporate policies. Studying how information is transmitted and the content of that information in different settings is therefore often an important step to understand economic phenomena.

This dissertation consists of three empirical essays that study information transmission in financial markets and the corporate world. In Chapter 2 I study the information content of commodity futures returns with respect to stock markets around the world. Chapter 3 provides a systematic analysis of whether or not ESG ratings have information about future stock returns. In Chapter 4 I examine how information about corporate social responsibility practices spreads across the business world through the social networks of corporate executives and directors. Chapter 5 consists of concluding remarks.

The information content of commodity futures markets

Commodity markets are the backbone of the global economy. Many countries are highly exposed to commodity trade. This is especially so for the least developed countries, 85% of which have over 60% of their revenues tied to commodity trade (e.g., van der Ploeg and Venables (2012)). According to our calculations, the level of dependence on commodity trade is also striking in some developed countries. For example, primary commodity trade accounts for 30% of the GDP of countries such as Australia, Canada, and Norway.

Price volatility in commodity markets can thus have devastating consequences for the economies and financial markets of many countries around the world, often the ones that are least able to cope with economic distress (e.g., Morduch (1995)). The recent 2007-2008 world food crisis illustrates. World rice prices tripled in six months, with prices of other commodities such as wheat, corn, and soybeans also surging to uncomfortable heights (e.g., Dawe (2012)). Political instability and violent riots fueled by hunger and fear spread
through dozens of countries in the developing world. At least hundreds of injured and dozens of deaths were reported.

Despite the economic importance of commodity markets for the world economy, we know little about the relation between commodity and stock markets around the world. This is an important gap, especially in light of the concern that speculation in commodity futures markets might feed into the real economy by affecting commodity spot prices and firms’ production decisions. The case in point is the recent model of Sockin and Xiong (2015) which provides a framework under which the surge in commodity prices in 2007-2008 may have been partially driven by distorted price signals originating from commodity futures markets. Crucially, the central feature of this model is the assumption that commodities have information about the state of the global economy. It is thus important to examine the empirical foundations of this feature. In Chapter 2 we try to do so by studying the information content of six commodity sectors with respect to the stock markets and macroeconomic fundamentals of 70 countries between 1979 and 2016.

We find that stock market predictability from commodity futures markets is a pervasive global phenomenon that affects developed and emerging countries alike. Commodity futures returns have predictive power for country-level stock returns in 59 of the 70 countries in our sample, with most countries being predicted by several commodity sectors. Macroeconomic fundamentals are also related to past commodity futures returns in 62 countries.

Strikingly, our analysis of the economic channels of information transmission suggests that countries’ dependence on commodity trade plays a limited role in explaining why some countries are predicted by certain commodity sectors and others are not. This suggests that the global information flows from
commodity to stock markets cannot be explained by standard trade dependence arguments.

We find much stronger support for the view that predictability is tied to the ability of commodities to predict inflation rates, even after taking into account the effects of trade dependence and several other country characteristics. This is in line with recent theories which argue that commodities may be able to aggregate dispersed information about the state of the global economy in a complex manner that goes beyond trade dependence mechanisms (e.g., Sockin and Xiong (2015)).

We are also able to dispel the conventional wisdom that the information flow from commodity to stock markets is all about the energy sector and large countries that account for a disproportionate amount of the world’s GDP and commodity demand.

To this end we develop novel measures that quantify the economic significance of cross-market information flows. We find that these information flows are evenly distributed across countries and commodity sectors. Agriculture and industrial metals sectors account for half of the global stock market variation that is predicted by commodity futures returns, ahead of the energy sector which accounts for 20%. Strikingly, no single country captures more than a relatively small share of the worldwide information flows from commodity to stock markets.

Overall, our results suggest that commodity futures markets play a unique information discovery role in financial markets by aggregating dispersed information about global stock markets and macroeconomic fundamentals.
Drawing up the bill: does sustainable investing affect stock returns around the world?

In Chapter 3 we conduct an extensive examination of the stock market performance of sustainable investing, also known as ESG ("Environmental, Social, and Governance") investing. We do so by studying whether or not ESG ratings have information about future stock returns. ESG ratings, which measure how well firms incorporate ESG considerations in their business activities, are a relevant metric because of their widespread use by practitioners and researchers.

The rise of sustainable investing is one of the most impressive trends in financial markets in recent memory. The United Nations’ Principles for Responsible Investment (PRI), a network of institutional investors committed to incorporating ESG considerations in their decision-making, has over 3,000 signatories as of 2021. This is a threefold increase since 2013. Together they manage assets worth north of US $100 trillion. Notably, the trend is not yet slowing down. Total assets under management in ESG funds reached US $1.7 trillion in 2020, a 50% increase over the previous year (Mooney and Mathurin (2021)). According to The Economist (2021), two ESG investment funds are created each day as of 2021.

A common selling point for practitioners is that ESG investing is a royal road to higher risk-adjusted returns. This, however, is at odds with recent theoretical models which predict that, over the long-term and under relatively mild conditions, sustainable investing should not outperform on a risk-adjusted basis (e.g., Pedersen, Fitzgibbons and Pomorski (2020), Pastor, Stambaugh and Taylor (2020)). The main reasons for these theoretical predictions are that (i) sustainability-minded investors may be willing to accept lower returns to hold high ESG stocks, and (ii) sustainable investing can only deliver positive abnormal returns over the long-run if enough market inefficiencies persist over time.
Chapter 1. Introduction

Not surprisingly, governments around the world worry about greenwashing and its potentially negative effects on investment income and future pensions. These worries are worth more than words and have led to policy action. Examples of legislation aimed at tightening ESG disclosure standards include the 2020 amendments to the Employment Retirement Income Security Act of 1974 in the US, the Sustainable Investing Disclosure Regulations (SFDR) in the EU, and the Financial Conduct Authority’s (FCA) recently proposed rules to tighten climate risk reporting requirements in the UK.

And yet, for all the hype and scrutiny sustainable investing gets, we still do not know whether it creates or destroys value - there are thousands of empirical studies on the topic with a wide range of conflicting findings.

Part of the problem is that these studies are very heterogeneous in terms of quality, methodology, time period studied, measures of sustainability used, and countries and industries covered. Recent meta-analyses on the topic (e.g., Friede, Busch and Bassen (2015)) have also been received with skepticism by at least some academics because they do not account for the heterogeneity of the underlying studies in a convincing manner (e.g., Dimson, Marsh and Staunton (2020), Matos (2020)).

Because of this, there is a need for a rigorous large-scale study of sustainable investing that explores how the relation between ESG ratings and future stock returns varies geographically, across industries, over time, and across ESG databases. We try to fill this gap in Chapter 3 by conducting a comprehensive examination of sustainable investing using a dataset covering various sustainability measures for 9,253 stocks in 46 countries over the last two decades. To our knowledge, this is the largest dataset assembled to date to study the stock market performance of sustainable investing.
Our main finding is that ESG ratings have little information about future stock returns. This holds when using a global sample of stocks, within most geographic regions, within sectors of economic activity, using different ESG ratings and combinations of those ratings, and when looking at different time periods. The main exception to this finding is that we find some evidence that the environmental and social components of ESG ratings positively predict cross-sectional variation in stock returns in emerging countries. We discuss several explanations for what might drive this finding in Chapter 3.

On the bright side, our results suggest that it may have been possible to pursue sustainable investment strategies in the last two decades without sacrificing financial returns. Our findings also suggest that sustainable assets may not suffer from widespread overvaluations - a major concern of investors and policymakers.

We caution, however, that these results are based on past performance and in Chapter 3 we discuss reasons for why sustainable investing might underperform going forward. In addition, despite our best efforts to conduct a comprehensive analysis, we acknowledge that there are ESG metrics and investment strategies that we do not consider. Nonetheless, our results provide evidence that it may be prudent to scrutinize claims that sustainable investing outperforms before embracing such claims.

On the dark side, even though our analysis is based on realized returns and not expected returns, our findings cast some doubt on the view that sustainable investing has so far been effective in reducing the cost of equity of sustainable firms. This suggests that sustainable investing may not yet have succeeded in providing incentives for firms to internalize the negative environmental and social impacts of their actions. While we hope that the future is brighter than the past in this regard, our results also serve as a reminder of the simple observation
that our hopes do not always match reality. As such, our results do not deny the potential virtues of sustainable investing. But they do provide some food for thought for those who are confident that sustainable investing is a reliable and adequate substitute for government policy.

**Social networks and corporate social responsibility**

Chapter 4 complements Chapter 3 by studying sustainability-related information flows that are transmitted through firms’ social networks rather than through financial markets. I refer to the efforts that firms make to integrate ESG considerations in their business models as corporate social responsibility (CSR) in Chapter 4. I do so to stress that Chapter 4 deals with sustainability from the perspective of the corporation – as opposed to Chapter 3 which deals with sustainability from an investment perspective. Nevertheless, I acknowledge that the terms CSR and ESG are often used in practice as synonyms.

CSR, like sustainable investing, is a source of fierce debate. At the heart of this debate is the fundamental question of whether firms exist only to maximize profits or also to improve the welfare of stakeholders, such as employees, communities, and the broader society.

The view that the welfare of stakeholders should be a major business objective has natural appeal, with some authors even arguing that well-governed firms can often increase firm value by being socially responsible (e.g., Flammer (2015a), Edmans (2020)). This is sometimes referred to as the good governance view of CSR (e.g., Ferrell, Liang and Renneboog (2016)). The shareholder value maximization paradigm, however, is a bedrock of modern capitalism that has arguably played its part in bringing about unprecedented economic growth in historical terms. As such, there is a sensible concern that a paradigm shift towards stakeholder capitalism can do more harm than good (e.g., Fama (2021)).
A particularly prominent concern that divides academic and public opinion is the possibility that stakeholder capitalism may lead to widespread managerial entrenchment - the so-called *agency view* of CSR. For example, managers might divert resources from value creating projects to engage in corporate philanthropy and maximize their own well-being and career prospects at shareholders’ expense (e.g., Masulis and Reza (2014)). Related concerns include the possibility that (i) multi-stakeholder objective functions might make it hard to monitor and discipline managers, (ii) the interests of some stakeholders are arbitrarily prioritized over the interests of other stakeholders (e.g., Bebchuk and Tallarita (2020)), and (iii) a shift towards stakeholder capitalism might give unelected managers the power to decide on issues that are under the purview of democratically elected officials (e.g., Rajan (2020)).

This debate was sparked even further by recent events and ideas that have raised awareness about the negative social and environmental impact that firms may have on society. Examples include the discovery of the deaths of despair phenomenon (e.g., Case and Deaton (2020)), black lives matter, the #MeToo movement, the Greta Thunberg phenomenon, and the concern that shareholder-centric capitalism is incompatible with strong democratic institutions (e.g., Piketty (2020)) and the “common good” (e.g., Sandel (2020)).

When it comes to the debate between the good governance and agency views of CSR, the truth is perhaps somewhere in the middle - complex and context-dependent. As a consequence, there is deep interest in understanding what drives firms’ CSR practices, how CSR decisions come about, and in which situations CSR is consistent with good corporate governance versus agency mechanisms.

Chapter 4 aims to shed some light on these questions by studying how CSR practices are transmitted across firms through the networks of their executives.
and directors. This is an interesting setting for two reasons. First, there are very good reasons on both sides of the good governance-agency debate for why social network effects in CSR could arise. This makes for a fair race between the two explanations. Second, it allows us to study a novel, specific, and well-identified mechanism through which CSR decisions may come about. This is particularly relevant from the perspective of understanding the role played by the board of directors in shaping CSR - a topic we know relatively little about despite the fact that boards and CSR are both important topics subject to substantial government regulations (e.g., Adams (2017), Roe et al. (2020)).

In the context of social network effects in CSR, the good governance view is that firms can use the social networks of their executives and directors to obtain information about how to optimally design CSR projects and get a competitive advantage over industry rivals.

According to the agency view of CSR, however, social networks are fertile ground for executives and directors to use CSR to maximize their own private well-being at the expense of profit creation. First, business leaders may internalize their social peers’ CSR ideals through mechanisms of social interaction and persuasion (e.g., Akerlof and Kranton (2000)). If so, they might decide to act according to those ideals even if that is not in the best interest of shareholders and even some stakeholders.

Second, business leaders may choose to behave similarly to their social peers to get peer esteem and advance their careers (e.g., Bénabou and Tirole (2011a), Levit and Malenko (2016)). To illustrate, take the example of a director who is not inclined to support environmentally-friendly firm policies. If the predominant belief in her social network is that firms should support those policies, what is this director to do? One option would be to ignore her social peers’ beliefs and push for policies that she believes are in the best interest of
shareholders. The reputation of opposing environmentally-friendly positions, however, would be frowned upon by her social peers who could then be less inclined to have her as a fellow board member or golf companion. Conformity might be an easier option.

Using a rich dataset covering various types of social connections between more than 80,000 top executives and directors of US firms between 2001 and 2016, I provide evidence that CSR practices spread through the social networks of firms’ directors. These social network effects are economically large. When firms’ social peers increase their CSR performance by one standard deviation, the average firm responds by increasing its own CSR by 16%.

Remarkably, these social network effects in CSR are not widespread across all types of firms. Rather, they are only present for firms that have three specific characteristics. First, these are firms pursuing product differentiation strategies for which CSR is more likely to add value. This suggests that social network effects occur when firms can benefit from learning from their social peers.

Second, these are firms that are strategically positioned in the corporate social network to obtain valuable information. This suggests that social network effects occur when firms are able to learn.

Third, these are firms in which the incentives of managers and shareholders tend to be more aligned as measured by several corporate governance metrics, such as the fraction of independent directors on the board and the CEO pay-performance sensitivity. This suggests that social network effects occur when there are good governance mechanisms in place to ensure that managers working in firms that can learn and that benefit from learning do indeed try to learn - as opposed to trying to benefit themselves at the expense of shareholders.

In sum, social transmission of information through social networks seems to shape CSR decision-making in a way that is consistent with the good
governance view of CSR. Assuming that the CSR practices captured by my CSR measures increase the welfare of stakeholders, this social transmission of information generates a social multiplier in CSR that may amplify the positive externalities of CSR on society.

Furthermore, under the plausible assumptions that (i) social network effects in CSR are consistent with good governance and benefit stakeholders, and (ii) firms do not internalize the positive impact of their CSR decisions on the CSR decisions of their social peers, my results suggest that there may be underinvestment at the society level in at least some forms of CSR.

A possible implication is that some firms might choose not to invest in CSR because they lack social network access to valuable information about CSR. From this perspective, my results provide some motivation for the CSR interventions in small and medium enterprises conducted by the United Nations Industrial Development Organization (UNIDO). One of the key goals of these interventions is to inform firms about the potential benefits of CSR practices.

A word of caution is warranted, however. My results do not imply that CSR is never a manifestation of agency problems. The results simply indicate that this is unlikely to be the dominant reason behind social network effects in CSR. My results also do not suggest that CSR is a perfect substitute for government regulations. Nonetheless, my findings suggest that firms can to some extent pursue socially useful CSR projects without compromising on good governance. Given the ample scope for agency motives to give rise to social network effects in CSR, this is a most hopeful finding.
Declaration of contributions

In this section I declare my contributions to the different chapters that comprise this dissertation and acknowledge the contribution of others.

Chapter 2: Based on Alves and Szymanowska (2019). Marta Szymanowska provided the initial research question. We jointly developed the initial research question into a set of concrete hypotheses. I collected the data and made the analysis. We jointly wrote the paper. I thank Christoph Meinerding, Craig Pirrong, Frans de Roon, Frauke Skudelny, Hank Bessembinder, Jianan Liu, Kewei Hou, Marcel Prokopczuk, Mathijs van Dijk, Mehdi Khorram, as well as conference and seminar participants at the SFS Cavalcade Asia-Pacific 2019 Meeting, 27th Finance Forum, the Commodity & Energy Markets Association 2019 Meeting, the European Economic Association 2019 Meeting, the Financial Management Association 2019 Meeting, the 6th SAFE Asset Pricing Workshop at Goethe University Frankfurt and Deutsche Bundesbank, the 3rd Commodity Markets Winter Workshop at Leibniz University Hannover, and Erasmus University for helpful comments.

Chapter 3: Based on Alves, Krueger and van Dijk (2021). The research question was provided by Mathijs van Dijk and Philipp Krueger. We jointly developed the methodology. I conducted the empirical analysis and was responsible for most of the writing. I thank Marta Szymanowska for valuable comments.

Chapter 4: Based on Alves (2020). I was solely responsible for all aspects of the project. Part of this paper was written during a research visit to the London Business School where I benefited from several discussions with
Chapter 1. Introduction

Chapter 5

Summary and concluding remarks

The first essay shows that commodity futures returns aggregate dispersed information about future macroeconomic fundamentals and country-level stock returns in many countries around the world. Remarkably, we also find that countries’ dependence on commodity trade is not the primary explanation for this phenomenon. This finding holds even if we account for indirect exposures to commodity trade dependence that arise due to financial and trade integration across countries.

This suggests that the information discovery role played by commodity markets is phenomenally complex and truly global in nature. We find further support for this interpretation in our finding that the information that commodity markets have about future stock returns around the world is fairly split both across commodity sectors and across countries. In other words, the information flows from commodity to stock markets are not restricted to the energy sector and a narrow set of countries with special characteristics.

Our results are thus consistent with one of the key ingredients of the influential model of Sockin and Xiong (2015): the idea that commodity futures prices have information about the state of the global economy. As such, our
findings give some plausibility to the theoretical possibility studied by Sockin and Xiong (2015) that commodity futures trading may generate (potentially distorted) price signals that affect the production decisions of firms around the globe as well as commodity spot prices.

Our hope is that this essay motivates further research on the interaction between commodity futures trading and the real economy. Only then can we truly understand whether we should celebrate or try to curb the speculation surge in commodity futures markets that we have experienced since the early 2000s (e.g., Cheng and Xiong (2014)).

The second essay provides evidence that sustainable investing based on ESG ratings is unlikely to have systematically improved or hurt investment performance during the last two decades. This finding is strikingly robust - it holds across most world regions, in different time periods, in different sectors of economic activity, when using different ESG ratings from three major raters, when using combinations of these ratings, and whether we use ESG ratings in levels or changes (ESG momentum).

While we acknowledge that the performance of sustainable investing might be different going forward, we believe that our findings provide interesting insights. On the bright side, our results indicate that sustainable stocks are unlikely to be very overvalued at this stage. This alleviates the pervasive concern raised by several policymakers and investors that we are living through an ESG “bubble”. Relatedly, our findings also indicate that it might be possible to engage in sustainable investing without forgoing returns. This is a most positive finding as it suggests that it might be possible to satisfy the non-pecuniary utility of investors without sacrificing their pensions and material well-being.

These results, however, also have a darker interpretation. Exactly because the relation between ESG ratings and stock returns is flat, the results allow for
the possibility that sustainable investing cannot be trusted to always decrease the cost of equity of sustainable firms. As such, our results provide some empirical support to the view that sustainable investing is not a reliable solution to create a more sustainable world.

We recognize that theoretical models (e.g., Pastor, Stambaugh and Taylor (2020)) predict that sustainable firms may even outperform their unsustainable counterparts over short periods of time due to unexpected news that increase the realized returns of sustainable firms - a fact that need not imply that sustainable firms benefit from a lower cost of equity. Our findings neither discredit these models nor imply that sustainable investing will not be an important driver of positive change in the future.

Rather, our results highlight that there is a possibility that many sustainable firms may not be compensated with lower costs of equity for extended periods of time - as long as two decades. This is worrying because many would argue that two decades is hardly short-term in the fight against societal problems such as climate change. For example, climate experts often give 2030 and 2050 as deadlines for courageous reductions in carbon emissions. It is therefore uncertain whether or not sustainable investing will provide strong enough incentives for firms to reach desirable sustainability targets in a timely manner. Hence, our results suggest that it might be risky to bet on sustainable investing to substitute for government policy in bringing about a more sustainable word.

In the third essay I identify a new channel through which boards of directors shape CSR practices in firms: social learning through social networks. In particular, I provide evidence that the various educational, leisure, and employment links that are shared by firms’ directors create a social network that functions as a market for information exchange about CSR.
Chapter 5. Summary and concluding remarks

Notably, these social network effects in CSR are concentrated in firms that can benefit from learning about CSR policy, firms that have a good position in the social network that enables them to access valuable information, and firms in which the incentives of managers and shareholders are aligned. My results thus suggest that the traditional concept of good governance that underpins shareholder capitalism is, at least to some extent, consistent with CSR.

A compelling feature of this essay is that it identifies a narrow channel through which directors shape CSR policies in the corporate world. This sheds some light on how a specific corporate governance mechanism - the board of directors - influences CSR. In doing so, it also contributes to unraveling the blackbox of how CSR decisions are made in practice. These two issues are key to fully understanding the relation between corporate governance and CSR. As such, the findings in this essay may be useful inputs in the debate about what the role of firms in society should be.

Indeed, these questions have been the target of great public debate. A particularly polemic case is the Sustainable corporate governance initiative by the European Commission, which is motivated by a study by Ernst & Young entitled “Study on directors’ duties and sustainable corporate governance”. One of the aims of this initiative is to make directors pay more attention to stakeholders’ interests. The problem, according to the study, is that directors ignore the interests of stakeholders because their incentive are overly aligned with the short-term profit maximization incentives of shareholders.

My results suggest that there may be more nuance to this idea than meets the eye. At least when it comes to social network effects in CSR, the firms with better aligned incentives are precisely the ones that make efforts to learn about
CSR. It is thus not the case that incentive alignment and traditional corporate
governance necessarily lead directors to ignore the interests of stakeholders.\textsuperscript{44}

What does this imply for governance reforms such as the European Com-
mission’s initiative? My results do not imply that the levels of social responsi-
bility that firms voluntarily choose are optimal from the perspective of society
as a whole. My results also do not suggest that there is no room for govern-
ment policy to address the negative environmental and societal externalities
that firms create. In fact, my results suggest that spreading information about
the benefits of CSR might lead some firms to invest more in CSR in a way that
is consistent with good governance. The CSR Programme of the United Na-
tions Industrial Development Organization (UNIDO) works with governments
and firms around the world to do exactly this. My results, however, provide ev-
dence that good corporate governance can, to some extent, coexist with CSR.
This, by itself, is arguably desirable. As such, proposals to change the corporate
governance status quo may benefit from carefully addressing the possibility that
there may be an economically relevant opportunity cost of doing such changes.

\footnote{I acknowledge that the external validity of my results is limited to the scope of social network
effects in CSR. The study of Ferrell, Liang and Renneboog (2016), however, also finds that cor-
porate governance metrics are positively associated with CSR in a more general setting. My study
complements theirs by identifying a narrow channel through which the positive association be-
tween corporate governance and CSR arises. This is interesting for two reasons. First, the study of
this narrow channel allows me to use a variety of tests and identification strategies that provide fur-
ther credibility to the idea that CSR is, to some extent, consistent with good corporate governance.
Second, there are very good reasons for why social network effects in CSR could be a manifesta-
tion of agency problems. To the extent that this is the case, my results provide particularly strong
evidence for the good governance view of CSR.}
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Nederlandse samenvatting (Summary in Dutch)

Het eerste essay toont dat rendementen van grondstoffenfutures een totaalbeeld geven van verspreide informatie over toekomstige macro-economische factoren en aandelenrendementen op landenniveau in tal van landen wereldwijd. Opmerkelijk is dat we ook hebben vastgesteld dat de afhankelijkheid van landen van de grondstoffenhandel niet de belangrijkste verklaring voor dit verschijnsel is. Deze bevinding geldt zelfs als we rekening houden met indirecte blootstelling aan afhankelijkheid van grondstoffenhandel die ontstaat door financiële en handelsintegratie tussen landen.

Dit suggereert dat de rol die grondstoffenmarkten spelen voor het openbaren van informatie uitermate complex en van absoluut wereldwijde schaal is. Deze interpretatie kunnen we verder onderbouwen met onze bevinding dat de informatie die grondstoffenmarkten hebben over toekomstige opbrengsten van voorraden wereldwijd gelijk verdeeld is tussen grondstoffensectoren en tussen landen. Met andere woorden, de informatiestromen van de grondstoffenmarkten naar de aandelenmarkten beperken zich niet tot de energiesector en een klein aantal landen met specifieke kenmerken.

Onze resultaten zijn dus consistent met een van de belangrijkste onderdelen van het invloedsmodel van Sockin and Xiong (2015): het idee dat grondstoffen-
futures informatie hebben over de staat van de wereld-economie. Onze bevindingen als zodanig geven enige plausibiliteit aan de door Sockin and Xiong (2015) onderzochte theoretische mogelijkheid dat de handel in grondstoffenfutures (mogelijk verstoorde) prijssignalen kan genereren die van invloed zijn op productiebeslissingen van bedrijven in de hele wereld en op spotprijzen van grondstoffen.

Onze hoop is dat dit essay een motivering zal zijn voor verder onderzoek naar de wisselwerking tussen de handel in grondstoffenfutures en de reële economie. Alleen zo kunnen we echt begrijpen of we de speculatiegolf in de markten van de grondstoffenfutures die we sinds het begin van de jaren 2000 hebben gezien, als een zege moeten beschouwen of in bedwang moeten houden (bv. Cheng and Xiong (2014)).

Het tweede essay toont aan dat duurzaam beleggen op basis van ESG-ratings de beleggingsresultaten de afgelopen twintig jaar waarschijnlijk niet systematisch heeft verbeterd of geschaad. Dit is een buitengewoon sterke conclusie die standhoudt in de meeste regio’s van de wereld, in verschillende tijdspériodes, in verschillende economische sectoren, bij het gebruik verschillende ESG-ratings van drie grote beoordelaars, bij gebruik van combinaties van deze ratings, en bij het gebruik van ESG-ratings met zowel niveaus als veranderingen (ESG-momentum).

Hoewel wij ons ervan bewust zijn dat de resultaten van duurzaam beleggen in het vervolg anders kunnen zijn, geloven we dat onze bevindingen interessante inzichten bieden. Het goede nieuws is dat onze resultaten erop wijzen dat duurzame aandelen, als categorie, op dit moment waarschijnlijk niet worden overgewaardeerd. Dit vermindert de door meerdere beleidsmakers en beleggers geuite zorg dat we ons in een “ESG-bubbel” bevinden. In dit verband wijzen onze bevindingen er ook op dat het mogelijk zou kunnen zijn duurzaam te
beleggen zonder te moeten inboeten aan rendement. Dit is een buitengewoon positieve bevinding, aangezien dit suggereert dat het mogelijk is dat beleggers een niet-geldelijke bijdrage leveren die niet ten koste gaat van hun pensioenen en materieel welzijn.

Deze resultaten kunnen echter ook op een negatieve manier worden geïnterpreteerd. Juist omdat het verband tussen ESG-ratings en beleggingsrendementen nihil is, kan er mogelijk niet op worden gerekend dat duurzaam beleggen altijd de kapitaalkosten van duurzame bedrijven verlaagt. Onze resultaten verschaffen hiermee enige empirische onderbouwing van het standpunt dat duurzaam beleggen geen betrouwbare oplossing is om de wereld duurzamer te maken.

Wij erkennen dat theoretische modellen (bv. Pastor, Stambaugh and Taylor (2020)) voorspellen dat duurzame bedrijven hun onduurzame concurrenten zelfs in een kort tijdsbestek kunnen overtreffen als gevolg van onverwachte ontwikkelingen die de behaalde rendementen van duurzame bedrijven verhogen, waarbij duurzame bedrijven niet eens lagere kapitaalkosten moeten hebben. Onze bevindingen trekken deze modellen niet in twijfel en wijzen er evenmin op dat duurzaam beleggen in de toekomst een belangrijke aanjager van positieve verandering zal zijn.

Wel benadrukken ze dat het mogelijk is dat veel duurzame bedrijven lange tijd, tot wel twintig jaar lang, niet zullen worden beloond met lagere kapitaalkosten. Dit is zorgwekkend, omdat twintig jaar volgens velen in de strijd tegen maatschappelijke problemen zoals klimaatverandering nauwelijks als korte termijn kan worden beschouwd. Klimaatdeskundigen geven bijvoorbeeld vaak 2030 als deadline voor ambitieuze reducties van CO2-emissies. Het is daarom onzeker of duurzaam beleggen bedrijven voldoende zal stimuleren om tijdig de gewenste duurzaamheidsdoelstellingen te behalen. Onze resultaten
laten dus zien dat het wellicht riskant is om in te zetten op duurzaam beleggen in plaats van overheidsbeleid om de wereld duurzamer te maken.

In het derde essay identificeer ik een nieuw kanaal dat bestuursraden van bedrijven volgen om hun MVO-praktijken vorm te geven: sociaal leren via sociale netwerken. Meer specifiek toon ik aan dat de diverse links voor opleidings-, recreatieve en werkgelegenheidskansen die bedrijfsdirecteuren delen, een sociaal netwerk creëren dat als markt voor de uitwisseling van informatie over MVO fungeert.

 Deze socialenetwerkeffecten op het gebied van MVO zijn met name waarneembaar in bedrijven die er baat bij kunnen hebben om meer over MVO te leren, bedrijven die dankzij een goede positie in het sociale netwerk toegang hebben tot waardevolle informatie, en bedrijven waar de ambities van managers en aandeelhouders op één lijn liggen. Mijn resultaten wijzen er dus op dat het traditionele concept van goed bestuur waar aandeelhouderskapitalisme op berust, ten minste in zekere mate consistent is met MVO.


Dit is uiteraard al lang onderwerp van een groot publiek debat. Bijzonder twijfelachtig is het initiatief *duurzame corporate governance* van de Europese
Nederlandse samenvatting (Summary in Dutch)

Commissie, dat gebaseerd is op het onderzoek “Study on directors’ duties and sustainable corporate governance” van Ernst & Young. Een van de doelen van dit initiatief is dat directeuren meer rekening houden met de belangen van aandeelhouders. Volgens het onderzoek is het probleem dat directeuren de belangen van aandeelhouders negeren omdat hun beleid te sterk is afgestemd op de drang van aandeelhouders naar maximale rendementen op korte termijn.

Mijn resultaten laten zien dat dit idee wellicht genuanceerder ligt. In elk geval voor wat betreft de socialenetwerkeffecten bij MVO zijn bedrijven met een beter afgestemd beleid juist degenen die meer doen om bij te leren over MVO. Het is dus niet zo dat afstemming van het beleid en traditionele corporate governance noodzakelijk zijn tot gevolg hebben dat directeuren de belangen van aandeelhouders negeren.51

Wat betekent dit voor bestuurshervormingen zoals het initiatief van de Europese Commissie? Mijn resultaten suggereren niet dat het niveau van maatschappelijke verantwoordelijkheid dat bedrijven vrijwillig kiezen, optimaal is vanuit het perspectief van de maatschappij als geheel. Mijn resultaten suggereren evenmin dat er geen ruimte is voor overheidsbeleid om de negatieve externe effecten op milieu en maatschappij die bedrijven veroorzaken, tegen te gaan. Wat mijn resultaten suggereren, is dat het verspreiden van informatie over de verdiensten van MVO ertoe kan leiden dat sommige bedrijven meer investeren in MVO op een manier die consistent is met goed bestuur. Dit is ...

51Ik erken dat de externe geldigheid van mijn resultaten zich beperkt tot de reikwijdte van socialenetwerkeffecten op het gebied van MVO. In het onderzoek van Ferrell, Liang and Renneboog (2016) wordt echter ook geconcludeerd dat er meer in het algemeen een positief verband bestaat tussen corporate governance-indicatoren en MVO. Mijn onderzoek vult het genoemde onderzoek aan doordat het een smal kanaal identificeert waarin het positieve verband tussen corporate governance en MVO zichtbaar wordt. Dit is om twee redenen interessant. Ten eerste geeft het onderzoek naar dit smalle kanaal mij de kans om een aantal tests en identificatiestrategieën te gebruiken die meer geloofwaardigheid geven aan het idee dat MVO in zekere mate consistent is met goede corporate governance. Ten tweede zijn er zeer goede redenen om aan te nemen dat socialenetwerkeffecten op het gebied van MVO een uiting van principaal-agentproblemen kunnen zijn. Voor zover dit het geval is, vormen mijn resultaten een bijzonder solide onderbouwing van het idee van het positieve verband tussen goed bestuur en MVO.
precies het doel van het MVO-programma van de United Nations Industrial Development Organization (UNIDO), waarin wordt samengewerkt met regeringen en bedrijven over de hele wereld. Mijn resultaten laten echter ook zien dat goede corporate governance tot op zekere hoogte parallel aan MVO kan worden toegepast. Of dit wenselijk is, valt te betwisten. Voor voorstellen om de huidige situatie van corporate governance te veranderen, is het wellicht nuttig om zorgvuldig rekening te houden met de mogelijkheid dat dergelijke veranderingen economisch relevante opportuniteitskosten met zich meebrengen.
Rómulo Alves was born in Santarém, Portugal, on April 30, 1991. Before the start of his PhD in 2016, he completed a Bachelor in Management at the Nova School of Business and Economics in Lisbon, a Master in Finance (cum laude) at the Rotterdam School of Management, Erasmus University, and a Research Master in Economics at the Tinbergen Institute in Amsterdam. During this period he co-founded Nova University’s debate club, co-organized the first Leadership Tournament in Portugal, worked in microfinance in India, held leadership positions in AIESEC, and received a best master thesis award and a citizenship award.

During his PhD at the Erasmus University Rotterdam, Rómulo presented his work at various conferences and seminars around the world, such as the annual meetings of the American Finance Association, the European Finance Association, and the SFS Cavalcade Asia-Pacific. He also received two best paper awards and went on a research visit to the London Business School.

Rómulo now lives in Paris where he is Assistant Professor at SKEMA Business School. His current research interests include corporate governance, corporate social responsibility, corporate finance, and sustainable finance.
Portfolio

Working papers

• Alves, Romulo, and Marta Szymanowska, 2019, The information content of commodity futures markets, Available at SSRN 3352822.

• Alves, Romulo, 2020, Social networks and corporate social responsibility, Available at SSRN 3710868.

• Alves, Romulo, Philipp Krueger, and Mathijs van Dijk, 2021, Drawing up the bill: Does sustainable investing affect stock returns around the world?, Working Paper.

Conferences and seminars\textsuperscript{52}

2021

• American Economic Association Poster Session (Virtual)

• Bank of Portugal Seminar (Virtual)

• European Financial Management Association PhD Workshop (Virtual)

• French Finance Association 37th International Conference (Virtual)

\textsuperscript{52}Presentations by co-authors marked with a *.
• KU Leuven Seminar (Virtual)
• Midwest Finance Association Annual Meeting (Virtual)
• Paris Dauphine University Seminar (Virtual)
• Royal Economic Society Annual Meeting (Virtual)
• SKEMA Business School Seminar (Virtual)

2020

• American Finance Association Annual Meeting Poster Session (San Diego)

• Econometric Society European Winter Meetings (Nottingham)
• Erasmus University PhD Seminar (Rotterdam)
• European Economic Association Annual Meeting (Rotterdam)
• European Finance Association Annual Meeting PhD Poster (Helsinki)
• Global Research Alliance for Sustainable Finance PhD Day (New York)
• London Business School PhD Seminar (London)
• Northern Finance Association PhD Symposium (Banff)
• Pompeu Fabra University Seminar (Barcelona)
• 4th Shanghai-Edinburgh Green Finance Conference (Shanghai)
• 5th SDU Finance Workshop (Odense)
• 17th Corporate Finance Day (Liège)
• 28th Finance Forum PhD Consortium (Lisbon)
2019

- Commodity & Energy Markets Association Annual Meeting (Pittsburgh)
- European Economic Association Annual Meeting (Manchester)
- European Economics and Finance Society Annual Meeting (Genoa)
- Financial Management Association Annual Meeting (New Orleans)*
- SAFE Asset Pricing Workshop (Frankfurt)*
- SFS Cavalcade Asia-Pacific (Hong Kong)
- XXII Applied Economics Meeting (Cartagena)
- 3rd Commodity Market Winter Workshop (Hannover)
- 27th Finance Forum (Madrid)

2018

- Erasmus Finance Day (Rotterdam)
- RSM/Erasmus PhD Day (Rotterdam)

2017

- RSM/Erasmus PhD Day (Rotterdam)

Teaching experience

Lecturer

- 2020 – Alternative Investments (BSc.)
- 2018 – Banking (BSc.)
• 2017-20 – Thesis Trajectory Lectures on Board Diversity and Firm Value (BSc.)

• 2016 – Thesis Trajectory Lecture on Investor Sentiment (BSc.)

Teaching Assistant

• 2020 – Valuation (MSc.)

• 2019 – Alternative Investments (BSc.)

Theses Supervision

• 2017-21 – 68 MSc. students

• 2016-20 – 45 BSc. students

Grants and Awards

• Netspar research grant (joint with Philipp Krueger and Mathijs van Dijk)

• Best Paper Award, Erasmus University PhD Seminar Series, 2020

• Talent Grant for outstanding PhD candidates, RSM/ERIM, 2020

• Hermes Kring Londen Fonds Grant, Research Visit at London Business School, 2020

• Best Paper Award on Derivatives, 27th Finance Forum, 2019

• Conference Travel Grant, Asociación Libre de Economía, 2019

• Oxford Scholarship and ERIM Travel Grant, Oxford Economic Networks Summer Programme, 2018

• ERIM Travel Grant, Workshop Causal Inference, Northwestern and Duke Universities, 2017
Portfolio

• Best Master Thesis Award, Erasmus University Rotterdam, 2014

• Citizenship Award, NOVA School of Business and Economics, 2013

• CG&G Certification, Outstanding Performance in Macroeconomics Course, NOVA School of Business and Economics, 2010
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