



Bursting the carbon bubble

Investigating the impact of the carbon bubble frame on the financial sector

Master thesis

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Abstract

In existing literature, no consensus has been reached yet on the effectivity of fossil fuel divestment. Considering the influential 2018 Taskforce on Climate-related Financial Disclosures report that recommends financial institutions to take the stranded assets risk into account, it seems that the financial sector has now adopted the carbon bubble or stranded assets narrative. This study explores how this impact has been realized. It uses process tracing to test three theoretical explanations: the theory of competing ideas, legitimacy theory and network theory. During the case study, it became clear that the stranded assets narrative has only caused a minor shift in language in the financial sector. Investments in the oil and gas sector however remain intact. Strong evidence has been found to confirm that the theory of competing ideas explains this limited effect. Some indications for legitimacy theory have been found as well. Unfortunately, this research has not been able to test network theory substantially, leaving this as a subject for future research.

Key words: carbon bubble, framing, competing discourses, process tracing, fossil fuels

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List of acronyms

BMO	Bank of Montreal
DNB	The Dutch Central Bank (in Dutch De Nederlandsche Bank)
PCAF	Platform for Carbon Accounting Financials
PRI	Principles of Responsible Investment
TCFD	Taskforce on Climate-related Financial Disclosures
UNEP Finance	United Nations Environmental Program Finance Initiative
VBDO	Dutch Association of Investors for Sustainable Development (in Dutch Vereniging Beleggers voor Duurzame Ontwikkeling)

Introduction

The most successful climate campaign in history

‘This is the most successful climate campaign in history’ was the headline of an article on Dutch news website The Correspondent about the global divestment campaign in December 2016 (Mommers, 2016). Jelmer Mommers, climate and energy journalist and author of the article, wrote: ‘Mainstream investors are turning their back on the fossil industry. They are moved by bold pressure exerted by the activists of 350.org and their divestment campaign’ (Mommers, 2016).

The divestment movement, which advocates divestment from fossil fuel companies and investment in green energy alternatives, was launched in November 2011 when Bill McKibben published the article *Global Warming’s Terrifying New Math* in the American magazine Rolling Stone (McKibben, 2012). In this article, McKibben (2012) combined existing data with numbers that had just been calculated by think tank Carbon Tracker: ‘Two degrees is the maximum amount of temperature increase the planet can take before catastrophe occurs, 565 more gigatons of carbon is the most that can be released into the air before we exceed that point and 2795 gigatons is the amount of carbon deposits fossil fuel companies have in their reserves and which they are planning to burn’ (McKibben, 2012).

McKibben concludes that there is thus another financial bubble on its way: the carbon bubble. Share prices of fossil fuel companies are overvalued, because they are based on reserves that largely have to remain untouched, if we are to keep the maximum rise of the atmosphere’s temperature under two degrees. Carbon Tracker calls these reserves ‘stranded assets’. According to this narrative, the carbon bubble will explode as soon as investors realize the fossil fuel companies in which they have invested cannot exploit their reserves. As a result, share prices will fall dramatically.

In the seven years after its birth, the divestment movement has grown exponentially. The organization Divest-Invest states that asset owners with assets worth \$ 6.3 trillion in total have committed to divest (Divest-Invest, n.d.), among which are the Rockefeller Brothers Fund, the City of New York and the Church of Sweden. Christiana Figueres, UN top negotiator who was in charge of the climate talks in Paris in 2015, said the global divestment movement ‘was a primary driver of success at the negotiations in Paris’ (Divest-Invest, n.d.). The “carbon bubble” has been covered extensively in the media (Bergman, 2018). In June 2018, a quantitative study by Mercure et al. (2018) predicted enormous losses of GDP as a consequence of the carbon bubble with computational climate models. This research made headway in authoritative newspapers like The Guardian (Harvey, 2018) and De Volkskrant (Waarlo, 2018). Several Dutch media have written about the importance of

the carbon bubble movement with headlines such as ‘It is sure that it will happen eventually. But when does the carbon bubble burst?’ in weekly *Vrij Nederland* (Oberndoff & Alberts, 2016), ‘This is the most successful climate campaign ever’ at news website *The Correspondent* (Mommers, 2016) and ‘Without government action a big financial crisis is around the corner, the financial sector warns’ in newspaper *Trouw* (Straver, 2018).

Carbon Tracker Initiative itself claims on its website that it ‘has cemented the terms “carbon bubble”, “unburnable carbon” and “stranded assets” into the financial and environmental lexicon’ (Carbon Tracker Initiative, n.d.). The Guardian writes that ‘Carbon Tracker has changed the financial language of climate change’ (Wills, 2014). Mark Carney, governor of the Bank of England and chair of international finance authority the Financial Stability Board¹, has since 2015 repeatedly warned investors for the carbon bubble, requesting them to consider the long-term impact of their decisions (Clark, 2015). In 2015, he founded the Taskforce on Climate-related Financial Disclosures (TCFD). The TCFD has recommended financial institutions and listed companies to report on climate-related risks, including stranded assets risk (Oliver Wyman and UNEP Finance Initiative, 2018). As a work group of the authoritative Financial Stability Board the TCFD has some weight. Next to the sixteen major European banks that helped develop the TCFD reporting methodology, 513 financial institutions and listed companies have expressed their support for the TCFD recommendations (Taskforce on Climate-related Financial Disclosures, 2019).

It thus seems that the financial institutions have adopted the carbon bubble or stranded assets narrative. This thesis examines how this process has taken place. The main question is thus formulated as follows:

What explains the adoption of the carbon bubble narrative by the financial sector?

Three theoretical explanations are used to answer this question: the theory of competing ideas, legitimacy theory and network theory. The theory of competing ideas argues that existing ideas and norms of targeted actors explain why these actors adopt new frames. Legitimacy theory, on the other hand, argues that organizations adopt frames in order to maintain a positive public perception of their organization. Lastly, network theory argues that relationships in which actors are embedded are most important in explaining why actors adopt new frames. Before these theories are explained in detail in chapter 2, the academic and societal relevance of this question are first described.

¹ Members are the central banks and financial ministries of 25 countries, the IMF, World Bank, OECD and several standard-setting bodies.

Academic relevance

The initial successes of the divestment movement are interesting in the light of the existing literature on divestment. Authors have not reached consensus on whether divestment works as a strategy (Teoh, Welch, & Wazzan, 1999; Sarang, 2015; Ansar, Caldecott, & Tilbury, 2013; Alexander, Nicholson, & Wiseman, 2014; Rickets, 2013; Ayling & Gunningham, 2017; Harmes, 2011; Ritchie & Dowlatabadi, 2015). Sceptics have used statistical analysis to prove that divestment has not influenced share prices (Teoh, Welch, & Wazzan, 1999; Harmes, 2011), share prices however are a narrow interpretation of measuring impact (Ansar, Caldecott, & Tilbury, 2013). Researchers who argue that fossil fuel divestment has made an impact often merely provide anecdotal evidence (Bergman, 2018; Alexander, Nicholson, & Wiseman, 2014; Ayling & Gunningham, 2017). In a 2018 study, Bergman identifies four ways in which the divestment movement has made an impact: the political, cultural, financial and mobilization impact. Concerning the financial impact, he observes a growing interest among investors in the issue of stranded assets: some investors only ask questions, others pull their money out. He also observes debates have taken place within the financial sector about redefining fiduciary duty, so that it does no longer prioritize maximizing returns over paying attention to climate-related risks.

Bergman's research appears to be biased however. He sums up the accomplishments of the divestment movement, but does not put their successes in perspective. For example, he mentions that the amount of fossil free funds has grown and that high profile foundations have committed to divest, but fails to mention that the majority of funds and foundations still invest in fossil fuels. Half of his interviewees are divestment campaigners (the other half are people working in the financial sector) which might have skewed the analysis in favour of the divestment movement. Whereas Bergman describes an overview of all four effects of the divestment movement, this research looks closely at its effect on the financial sector. By zooming in on one effect, additional information is hoped to be found.

The case study represents as a classic David versus Goliath story. Our economies run on fossil fuels. The power of fossil fuel companies like Shell, Exxon and BP is huge. They have direct access to the elites that govern our polities and financial institutions. Because of the entrenchment of our economies in fossil fuels and the power of these fossil fuel companies, years of multilateral climate negotiations have passed without any concrete result (Klein, 2015). The climate talks in Paris in 2015 appeared to be the first in a long time that did not end in deception, although many environmentalists are hesitant to call it a success. It is interesting to study how actors without any material power, like Carbon Tracker Initiative or 350.org, are trying to convince the financial sector to

abandon or at least lessen its ties with the powerful fossil fuel industry. Soft power, in the form of convincing frames, is crucial in this process.

This case study contributes to the academic debate on framing processes and competing discourses. In Foucault's view, social change reflects 'a shift in the relative influence of different discourses' (Sharp & Richardson, 2001, p. 196). Since his analysis of discourses, a lot of research has been done on discourses and framing processes. One important area of research concerns the question how discourses become dominant and how agents of social change try to influence this process. In their overview article of framing processes, Snow and Benford (2000) partially answer this question by describing factors that determine a frame's resonance. They point to the credibility of the frame, determined amongst others by the internal consistency of the frame, and its relative salience, which reflects amongst others to what extent the framing resonates with daily experiences of the targeted group. Another explanation for why frames are adopted by actors, in her case governments, is given by Joachim (2003). She argues that the political opportunity structure in which NGOs are embedded and the mobilizing structures they have at their disposal determine whether frames are adopted by targeted actors. Here, political opportunity structure is defined by access to international institutions, presence of powerful allies and changes in political alignments or conflicts; and mobilizing structures comprise of organizational entrepreneurs, an international constituency and experts (Joachim, 2003).

This research takes a new perspective on the question how frames become dominant. From existing theories - the theory of competing ideas, legitimacy theory and network theory - three explanations are derived that explain why the carbon bubble frame has risen in influence and has been adopted by the financial sector. This research tests if the causal mechanisms described in these theories are present in this case and if they work as expected. Hereby, insight is gained in the process of how discourses become dominant.

This case also gives us more insight in global governance, specifically in the interaction between financial institutions and NGOs. Since the 2000s private governance has risen at the expense of public governance (Pattberg, 2005). Instead of demanding governments to introduce policies to regulate private actors, NGOs are now targeting businesses and other private actors directly. The interaction between NGOs and businesses has been documented by many authors, focusing mostly on the co-optation of NGOs as a consequence (Trumpy, 2008; Soule, 2015; Baur & Schmitz, 2012). There is little research however on the interaction between NGOs and financial institutions (O'Sullivan & O'Dwyer, 2009). I argue that financial institutions should be considered as categorically different actors than companies, operating one level above them, since they decide where the money goes and which businesses get financed. This case study teaches us how NGOs influence

financial institutions and how financial institutions react. It can teach us if this interaction has any particular characteristics that we do not observe in the interaction between NGOs and businesses.

Societal relevance

Since the 1990s the well-organized climate action movement has not been particularly successful. Governments have failed to install effective climate policies. The divestment strategy is relatively new to the climate action movement: the fossil fuel divestment campaign was founded in 2011. This research investigates how Carbon Tracker Initiative and the divestment movement have used this strategy and in which ways they were successful. Other NGOs could consider using a similar strategy and they can then apply the lessons learnt from this case study. There are already other NGOs, like the Dutch environmental NGO Milieudefensie, that have copied the divestment strategy in their own campaigns (personal correspondence with Joep Karskens, campaign officer at Milieudefensie, the Dutch branch of the NGO Friends of the Earth).

This research will also gain insight in framing processes. It tests whether the content and ingenuity of frames are crucial or the networks via which these messages are spread. NGOs and other societal actors that are engaged in framing, such as businesses, governments and the media, can learn from this research to optimize their own framing exercises.

In the next chapter, the three theoretical explanations used in this research – the theory of competing ideas, legitimacy theory and network theory – are described in more detail. Chapter 3 describes the methodological choices made in this research. In chapter 4, the results from the interviews and document analysis are presented and linked to the theoretical explanations. In the conclusion, these results are interpreted in light of the main question, conclusions are drawn and suggestions for future research are made.

Chapter 2

Theoretical framework

To answer the main question of this thesis – what explains the adoption of the carbon bubble narrative by the financial sector? – three theoretical explanations are used. Note that this research aims to explain the behaviour of financial institutions, not the behaviour of the divestment movement.

The three explanations are derived from the theory of competing ideas, legitimacy theory and network theory. The theory of competing ideas argues that existing ideas and norms of targeted actors explain why these actors adopt new frames. Legitimacy theory, on the other hand, argues that organizations adopt frames in order to maintain a positive public perception of their organization. Lastly, network theory argues that relationships in which actors are embedded are most important in explaining why actors adopt new frames.

In the remaining chapter, the theories are explained in more detail.

2.1 Theory of competing ideas

Ideational scholarship is about the power of ideas, language and perceptions and their ability to shape political behaviour (Béland & Cox, 2011). Ideas are the lens through which we understand the world around us. They define our values and preferences, our goals and strategies and they are the ‘currency we use to communicate’ (Béland & Cox, 2011, p. 3). Emmerij, Jolly and Weiss (2005, p. 214) define ideas as ‘beliefs held by individuals or adopted by institutions that influence their attitudes and actions’.

Social constructivism is part of ideational scholarship and is focused on shared ideas and knowledge. It is well able to explain political behaviour that seems contradictory to material interests.

Constructivists argue that although material power cannot explain political behaviour, yet our perception of material power can. A well-known example compares the nuclear weapons of France and North-Korea (Wendt, 1999, p. 73). Since France has more nuclear weapons than North-Korea, it should pose a bigger threat to the Netherlands in terms of material power. Nevertheless, Dutch politicians are only worried about North-Korea’s arsenal. Their ideas about North Korea – perceived as an enemy, as unpredictable, as revisionist – are able to explain this.

Many constructivist political scientists have focused on the development of norms. Constructivists argue that norms create shared expectations of appropriate behaviour for given actors (Payne, 2001). There is not one norm or discourse in society, but there is a multiplicity of discourses that

constantly compete for influence. Next to the dominant discourse in which most people believe, alternative narratives exist that have smaller constituencies. In this Foucauldian view on discourses, societal changes can be perceived as 'shifts in the relative influence of different discourses' (Sharp & Richardson, 2001, p. 196). According to Foucault, we should not ask ourselves whether an argument is reflecting the truth or not, but rather how, why and by whom some arguments are considered as true and other arguments as false (Sharp & Richardson, 2001).

Advocates of social change try to influence the dominant norms by using language and communication. They create frames, which are 'persuasive messages to change actor preferences and to challenge current or create new collective meaning' (Payne, 2001, p. 38). Barnett (1999, p. 25) similarly defines frames as 'persuasive devices used to fix meanings, organize experience, alert others that their interests and possibly their identities are at stake, and propose solutions to ongoing problems'. Frames have several functions. Firstly, frames can influence actors' interests and perceptions, as emphasized in the definitions of Payne and Barnett. Secondly, frames offer specific interpretations of a situation and they prescribe appropriate behaviour, thereby creating social norms. Lastly, frames can mobilize supporters of the social movement, as becomes clear in Snow and Benford's definition of framing (1988, p. 198) as: 'assigning meaning to and interpreting relevant events and conditions in ways that are intended to mobilize potential adherents and constituents, to garner bystander support, and to demobilize antagonists'.

When norm entrepreneurs construct a frame that reflects new ideas and world views, these ideas have to compete with existing norms in society. Dominant societal norms are firmly embedded and have created logics of appropriateness and interest that favour the dominant norms and might conflict with the new norm. As Finnemore and Sikkink (1996, p. 897) state: 'New norms never enter a normative vacuum but instead emerge in a highly contested normative space where they must compete with other norms and perceptions of interest.'

A powerful frame has social power 'with relative autonomy from material power resources' (Lynch, 1999 as cited in Payne, 2001, p. 39). This means that it can motivate actors to behave in certain ways without having the material power to force them by referring to morality or awaking sentiment. A frame contains three elements: a diagnostic, prognostic and motivational frame (Snow & Benford, 1988). Diagnostic framing means identifying a problem and its sources, thereby focusing responsibility or blame. Prognostic framing means proposing solutions to the articulated problem. Motivational framing is providing peoples with rationales and motives to take action, and formulate 'vocabularies' around these motives (Snow & Benford, 2000, p. 617). Vocabularies can include

references to severity, urgency or efficacy. The results of framing activity in the social movement arena are called collective action frames.

Within framing theory a scholarship has developed that focuses on counterframing. These scholars describe framing processes as 'interactively based interpretative processes between actors' (Snow, 2004, p. 384). They argue that all political actors are engaged in framing: not only social movements, but also counter-movements, government and business elites and the media. Waller & Conaway (2011, p. 88) argue that since these actors' interests are often different than the interests of social movements, they produce counterframes that clash with social movement frames.

From the theory of competing ideas it is expected that the carbon bubble frame has brought new ideas that challenge financial institutions' perceptions of their interests and the appropriate action to take.

2.2 Legitimacy theory

Legitimacy theorists (Deegan, 2014; Dowling & Pfeffer, 1975) argue that reputation concerns explain why organizations adopt certain frames. Legitimacy is an important asset for organizations and firms: they can only maintain their operations with some level of community support. An organization's legitimacy is established if the values associated with its activities *are perceived* to be in line with societal norms (Dowling & Pfeffer, 1975). The emphasis is on the public perception of the company's behaviour, not on its actual behaviour. Companies have to actively manage this perception. Societal norms are not static or given, but subject to change. When they change and an organization does not react, a legitimacy gap can appear.

Organizations can react to their threatened legitimacy in two ways, as Ashforth and Gibbs (1990) describe. They can choose substantive management, which means they align their practices with changed societal norms, or symbolic management, which means they communicate changes without actually changing their practices. A common symbolic management tactic is ceremonial conformity: an organization adopts highly visible practices that are aligned with new societal norms, but leaves the essential activities which conflict with societal norms intact (ibid.).

Zajac & Westphal (1998) have introduced the term 'decoupling', which means a company uses language that decouples the espousal and actual implementation of change. They have found that in some cases the adoption or announcement of policies is sufficient to change public perception of companies without actual implementation of the new policies.

Legitimacy theorists are focused on symbolic management rather than substantial management. Lindblom (1994, as cited in Hooghiemstra, 2000) describes four strategies of companies to repair their legitimacy. None of these strategies involve an actual change in their behaviour. The strategies Lindblom (1994, as cited in Hooghiemstra, 2000, p. 56) describes are: '1) inform stakeholders about the intentions of the company to enhance its social performance, 2) try to influence stakeholders' perceptions concerning certain (negative) events without changing actual behaviour, 3) distract attention away from the legitimacy threatening event by emphasizing more positive actions which not necessarily have to be related, and 4) try to influence external or stakeholders' expectations about its behaviour'.

According to Elkington (1997, as cited in Hooghiemstra, 2000), companies seldomly use corporate social reporting to communicate an objective overview of their practices. Since the aim of corporate social reporting is creating a positive public perception of the company, management will focus on good news and is reluctant to communicate bad news (Hooghiemstra, 2000, p. 57). Elkington (1997, p. 171 as cited in Hooghiemstra, 2000, p. 57) thus states that companies use CSR as a communication vehicle 'designed to offer reassurance and to help with "feel-good" image building'.

Legitimacy theorists argue that organizations adopt frames in their public statements to maintain or repair their reputation. This explanation emphasizes the difference between language used by financial institutions and their actual beliefs and behaviour. It hereby contradicts the theory of competing ideas in which a change of language equals social change.

From legitimacy theory it is expected that financial institutions have adopted the carbon bubble frame in their public statements to protect their threatened reputation.

2.3 Network theory and social relations

The third explanation used to understand this case is network theory. Network theory explains why certain information and ideas are spread by referring to the relationships between individuals. Network theory is often used in political science, because political change involves collective action in which networked individuals and groups work together (Patty & Penn, 2017). This theory argues that the relationships and networks in which individuals are involved are the most important building blocks of their social reality (Marin & Wellman, 2011). Network theorists have a fundamentally different starting point than other social scientists. In explaining behaviour, for example whether workers are striking or not, other scientists would point to their individual attributes, like income or trade union membership. Network theorists explain striking behaviour by referring to the

relationships and networks of workers. If some of your co-workers are striking, the chances you will join are significantly higher, they argue.

By speaking of networks instead of groups, network theory describes the influence of structure on individuals in a more sophisticated way. It recognizes that individuals are members of multiple groups and that some group members have a higher attachment to the group than others. In this way, it is able to study varying levels of embeddedness of individuals and thus varying levels of being constrained or enabled by structure (Marin & Wellman, 2011, p. 14). Network theorists do not believe that individuals have internalized norms. Instead, norms are constantly formed and adapted in interactions with others.

In network theory, actors are called nodes and the relationships between them are ties. Ties can be described in four steps: similarities, social relations, interactions and flows of resources (Borgatti & Lopez-Kidwell, 2011). Similarities mean that nodes are in the same subgroups and share some beliefs and attitudes. Similarities signal that ties are likely to develop. Social relations mean that nodes are connected to each other in some way. They are connected by role, for example family, colleagues or friends, and by their perception of each other: knowing, liking, disliking for example. Interactions exist when contact takes place, when nodes are talking to each other over the phone or meeting up. Flows are moving, when resources like information or ideas are shared (ibid.).

There are several strands of network theory research, which focus on varying aspects of networks: the structure of the relationships in the network; individual actors and their connections; or the meaning attributed to networks and connections (Fuhse & Mützel, 2011).

This research focuses on financial institutions and their connections; and the meaning they attribute to these connections. This is called qualitative network analysis (QNA). Through QNA, a researcher investigates how actors perceive their relations with others (Ahrens, 2018). The subjective interpretation of networks is crucial (ibid.). Whether an individual or organization (A) perceives another individual or organization (B) to be inside or outside their network, as ally or adversary, impacts how A responds to B. Until now, QNA has been used mostly to describe personal relations, however its use for exploring formal networks is promising (ibid.).

Although this research will not focus on the structure of the relationships in the network, because drawing the complete network of financial institutions and the carbon bubble movement will take too much time, some ideas from this strand of network theory can still be used. The degree to which an actor is connected to other actors – centrality – determines its influence for a large part. Another important factor is an actor's connectivity: the degree to which an actor forms (indirect) paths

between other pairs of actors, who would not be connected otherwise (Patty & Penn, 2017, p. 4). Such a pathway is called a bridge. Bridges are well suited to transmission new information and ideas to individuals. On the contrary, dense networks, where everybody is well connected to each other, are likely to reproduce dominant ideas (Granovetter, 1973; Burt, 1992). A small group of highly connected actors, like an elite, can slow the diffusion process at an early stage. When this elite is convinced, diffusion will catch up (Gibson, 2005). How actors in the network are connected thus influences how information is spread.

Network theory shines a different light on the process in which frames are adopted. The theory of dominant ideas implies that the ingenuity, and thus the content, of the new frame is crucial for its adoption by others. On the contrary, network theory argues that the relation between the sender and receiver of the message is most important. When relations are well-established; or the sender is perceived as reliable by the receiver; or the sender is in a strategic bridge position, the receiver of the message is more likely to take the sender's ideas seriously and more likely to adopt the new frame.

From network theory, it is expected that the networks in which financial institutions are embedded are crucial for the institutions' adoption of the carbon bubble narrative.

Chapter 3

Methodology

In this chapter, the methodologies and methods used in this research are described in detail.

3.1 Process tracing

This research examines the process in which the formulation of the terms ‘carbon bubble’ and ‘stranded assets’ by the carbon bubble movement, has led to the adoption by financial institutions of these terms. This process started in 2011 when Carbon Tracker Initiative coined the term *carbon bubble* and ends with a group of sixteen European banks publishing their report *Extending Our Horizons* in May 2018 and the Dutch Platform Carbon Accounting Financials (PCAF) publishing their report *Paving the way towards a harmonized Carbon Accounting Approach for the Financial Sector* in December 2017. These reports are indications of the adoption of the stranded assets narrative by the financial sector.

Process tracing examines the process through which A causes B. It can distinguish between correlation and causation, thereby confronting spuriousness. This research involves theory-testing process tracing, which proceeds as follows (Beach & Pedersen, 2013). From existing theories, three explanations are derived that explain how the carbon bubble narrative was adopted by financial institutions. These explanations come from the theory of competing ideas, legitimacy theory and network theory. This research tests whether the causal mechanisms described by these theories are present in this case and whether they function as predicted. In paragraph 3.2, the explanations are translated into case-specific observations that should be made if the causal mechanisms are present (Beach & Pedersen, 2013, p. 14). Document analysis and interviews will be used to find this evidence.

It is difficult to examine the impact of a social movement or NGO, because social change is a complex process in which many factors and actors play a role. Norms and institutions are constantly evolving and social movement campaigns take place simultaneously with other developments in society. It is therefore hard to causally link social change and social movement actions (Rootes & Nulman, 2015). This difficulty applies to this case study as well: for example, if we see that banks stop financing coal-fired power plants, how do we know whether they are moved by a perceived risk of stranded assets? Other factors, like the Paris agreement of 2015, might have played a role in this decision as well. Interviews are used to limit this problem: interviewees will be able to prioritize the factors that drove their decisions.

This research aims to find out whether the carbon bubble narrative has had an impact on the way financial institutions view fossil fuel companies. This research thus focuses on the influence of the carbon bubble or stranded assets narrative, and not on the strategy of divestment. This is an important distinction that popular media, including The Correspondent article cited in the introduction, and some academic articles do not make. Divestment is a possible solution for the carbon bubble risk. 350.org promotes divestment as the best solution, however Carbon Tracker Initiative argues shareholder engagement works better than divestment. This research investigates whether financial institutions have adopted the carbon bubble narrative. The focus of this research is thus on Carbon Tracker Initiative, since they engage more with the financial sector than the divestment movement.

Since Carbon Tracker Initiative does not support divestment as solution for the carbon bubble risk, it would be incorrect to call them part of the divestment movement. In this research, the movement that came up with the carbon bubble narrative, which include Carbon Tracker, 350.org, Divest-Invest and other organizations, is termed *carbon bubble movement*.

In the next section, the three theoretical explanations are operationalized into case-specific observations and questions.

3.2 Operationalization

Each of the three theoretical explanations requires the researcher to look at this case in a particular way, to ask particular questions and look at particular processes. This section describes the questions that will be asked to test whether the theoretical explanations are present in this case. Case-specific observations that should be made if the explanations is present are described as well.

Theory of competing ideas:

From the theory of competing ideas it is expected that the carbon bubble frame has brought new ideas that challenge financial institutions' perceptions of their interests and the appropriate action to take. To examine this, the following questions will be investigated:

- How do financial institutions perceive the carbon bubble risk? Do they see the carbon bubble risk as a threat?
- How do financial institutions view investments in fossil fuel companies in terms of morality?
- How do financial institutions see the future of fossil fuel companies?
- How do financial institutions view investments in fossil fuel companies in terms of profitability? How do they see the future development of this profitability?

- Which beliefs and values are currently held in the financial sector and do they clash with the stranded assets narrative?
- Are financial institutions pushing alternative narratives to delegitimize the stranded assets narrative?

To conclude that framing has taken place, it should be observed that the carbon bubble movement has formulated a frame that challenges how financial institutions view fossil fuel companies. How serious the financial institutions take the carbon bubble risk indicates how successful the framing has been. Limited success would mean that financial institutions are familiar with the term carbon bubble, but that they do not see it as a risk. If financial institution employees indicate that they see the carbon bubble as real threat for their investments and that they have designed policy to mitigate this threat, this would indicate effective framing. In between these extremes, a scale of success exists. If it is observed that the carbon bubble narrative clashes with existing ideas and values in the financial sector and therefore has limited success, this would confirm the mechanism of a contested space of ideas. If financial institutions are spreading a narrative that goes against the carbon bubble narrative, this would provide evidence that financial institutions are engaged in counterframing.

Legitimacy theory:

From legitimacy theory it is expected that financial institutions have adopted the carbon bubble frame in their public statements to protect their threatened reputation. To examine this, the following questions will be investigated:

- How do financial sector employees estimate public opinion on fossil fuels? Do they observe a change?
- How do financial institutions estimate their legitimacy in public opinion?
- What language do financial institutions publicly use to describe stranded assets risk? Is it general language or does it include concrete policies, targets and enforcement mechanisms?
- Can we observe a gap between the language of financial institutions on the carbon bubble risk and their policies to cope with this risk?
- Can we observe a difference in the language that is used in public reports of financial institutions and the attitude of interviewees concerning, for example, the carbon bubble risk or the urgency to solve the climate change problem?

To conclude that legitimacy theory plays a role in this case, it should be observed that the threat of stranded assets or the carbon bubble is not a priority for financial institutions. Interviewees should

indicate that they observe a change in public opinion on fossil fuel companies, but that they themselves see fossil fuel companies still as reliable and good partners. They still see fossil fuel investments as lucrative, they pay very high dividends and therefore, they are morally accepted. Interviewees should indicate that financial institutions speak publicly with high urgency on climate change and stranded assets in reaction to pressure from environmental movements and the resulting change in public opinion. The institutions write these statements and reports to prevent a further decline in their legitimacy.

Network theory:

From network theory, it is expected that the networks in which financial institutions are embedded are crucial for the institutions' adoption of the carbon bubble narrative. To examine this, the following questions will be investigated:

- To what extent did the interaction between financial institutions and the carbon bubble movement play a role in the adoption of the carbon bubble narrative by financial institutions?
- How often do financial institutions and fossil fuel companies meet each other? How is the relationship between them?
- How often do financial institutions and think tank Carbon Tracker Initiative meet? How is the relationship between them?
- Is Carbon Tracker seen as a bridge between the financial sector and the environmental movement?
- How is Carbon Tracker Initiative perceived by financial institutions? As an activist group or an objective financial think tank?

To conclude that networks have enabled the adoption of the carbon bubble narrative by financial institutions, it should be observed that the relationship between the carbon bubble movement and financial institutions is well established. Financial sector employees should indicate that they see Carbon Tracker as an objective financial think tank and that they take their reports seriously. They would also have to indicate that they have not established relationships with fossil fuel companies or that these relationships does not hinder them from breaking ties with fossil fuel companies if necessary. If it is the other way around and they perceive Carbon Tracker as an activist NGO or they indicate that they have built meaningful relationships with fossil fuel companies, this can explain why the carbon bubble narrative was not fully adopted by the financial sector.

3.3 Document analysis

Qualitative researchers often use triangulation, which means they combine multiple methodologies to study one phenomenon. Qualitative researchers are expected to use at least two sources of evidence to corroborate their findings and ‘to guard against the accusation that a study’s findings are simply an artifact of a single method, a single source, or a single investigator’s bias’ (Patton, 1990 as cited in Bowen, 2009). This research uses document analysis and interviews. Document analysis is used to get a first impression of the financial institutions’ view on stranded assets and climate change. Then, interviews will make clear how financial institutions have formed these views and whether a gap exists between public and internal language on climate change and stranded assets.

The following documents are analysed:

- *Extending Our Horizons*, a report of sixteen European banks in corporation with the UN Environmental Program for Finance in which they present their methodology for incorporating long-term climate-related risks (including stranded assets risks) in risk management.
- *Paving the way towards a harmonized Carbon Accounting Approach for the Financial Sector*, a report of the Dutch Platform Carbon Accounting Financials (PCAF) comprising of several Dutch banks, pension funds, asset manager MN and the Dutch Development Bank. This report presents an initial step towards developing an uniform methodology for carbon disclosure of investments and loans.
- ING’s webpages that introduce their new Terra method. Terra is ING’s method to calculate needed investments in the low-carbon economy. The process of developing Terra has just started, so there is no report published yet. On the website ING however presents their plan for Terra and the assumptions on which it will be based.

These methodologies are the tools that financial institutions are developing to facilitate the transition to a low-carbon economy. These reports can learn us a lot about how they see their responsibility in the transition and in how far they take into account the risk of stranded assets. Have they adopted the stranded assets narrative? What do they say about fossil fuel investments? Are they merely talking about stranded assets or is the language met by concrete policies, target setting and enforcement mechanisms?

These reports are the communication of the institutions to a broad public. The language that institutions use in these reports will be compared with the language of interviewees. This demonstrates whether a difference exists between the urgency given to stranded assets risk in public statements and the urgency really felt within organizations. From these reports will result in a first assessment on whether effective framing, counterframing or symbolic management has taken place.

The following questions are analysed while studying the documents:

- What is the solution/methodology that this initiative proposes?
- In how far does this methodology take into account the stranded assets risk? Does the report speak explicitly about the risk of stranded assets?
- How specific and binding is the methodology? Is it only about disclosure or does it also involve target setting and/or enforcement mechanisms?
- What are the underlying beliefs behind the methodology?

While reading the report *Extending Our Horizons*, I found out that it is very technical. It describes mathematical formulas to translate risks at the company-level to risks for banks. Although this made the analysis of the report challenging, still the first three main questions could be answered. The analysis focuses on the context of the report instead of merely focusing on its technical content. In addition, interviewees were asked to confirm the document analysis.

3.4 Interviews

Similarly to many studies (Bowen, 2009), this research combines document analysis with interviewing. Document analysis provides the context for the interviews and it will suggest interview questions. For example, if the document analysis makes clear that the narratives of the carbon bubble movement and the financial institutions overlap, the interviewees will be asked how this knowledge has been transmitted. Through interviews it can be established whether ideas and/or relations were important in spreading the narrative, so that conclusions can be drawn on whether the theory of competing ideas and network theory respectively are important in explaining this case. The interviewees will explain the context in which the previously mentioned reports should be understood.

Interviewing is a good tool to establish the role of ideational factors in decision-making processes: it is well suited to establish motivations, norms, culture and ethics (Rathbun, 2008). Interviewing is well suited for an in-depth case study like this research. It stresses context over generalizability and complexity over parsimony. The interviewees are key informants: respondents who represent the organization they work for (Mitchell, 1994). For this case study, it is interesting to hear the views of several financial institutions and institutions that critically assess the financial sector. The differences between these institutions are arguably bigger than the differences of opinion between employees of the same institution. It is therefore defensible to interview one key informant per institution.

This research fits in the interpretative paradigm. The aim is not to establish 'an objective truth' as positivists do, but to learn about the perceptions of employees in financial institutions and how they are shaped. Interviewing fits this research aim perfectly: it establishes motivations and preferences of actors. Interviewees can state the importance of multiple, equally plausible causes for their behaviour (Rathbun, 2008, p. 692).

Four representatives of the financial sector are interviewed, three representatives of the environmental movement and two persons that work at institutions that critically research the financial sector (Xander Urbach and Marleen Janssen-Groesbeek). The interviewees are:

1. Maarten Biermans, head of Sustainability Policy and Dialogue at Rabobank
2. Jeroen Loots, senior advisor Climate and Biodiversity at ASN Bank and coordinator of the PCAF
3. Pieter van Stijn, director Governance and Sustainable Investment at Bank of Montreal Global Asset Management, formerly senior advisor Responsible Investment at PGGM Investments
4. Marleen Janssen-Groesbeek, lector Sustainable Finance and Accounting at Avans Hogeschool, policy officer at Eumedion, that represents institutional investors on governance and sustainability issues, board member at FossielvrijNL, advisory board member of ASN Bank and VBDO, cofounder of Platform Pure Winst, that aims at cooperation among financial institutions on sustainability issues
5. Xander Urbach, project manager Sustainable Investments and Businesses at the Dutch Association of Investors for Sustainable Development (VBDO)
6. One anonymous interviewee that works for an institution that monitors the financial sector.
7. Henrik Jeppesen, head Investor Outreach North America at Carbon Tracker Initiative
8. Yossi Cadan, global divestment senior campaigner at 350.org
9. One anonymous interviewee that works for the Dutch brand of 350.org FossielvrijNL

Interviews can gain in-depth knowledge about the research topic. The disadvantage is that interviews are time-consuming. Since this research is a master thesis with a limited time schedule, the amount of interviews is limited. The reliability of this research could be improved by conducting more interviews. The selection of interviewees is aimed at collecting several perspectives. From the financial sector employees, one person works for a small, green bank; one person works for a major bank; one person works for an asset manager and formerly worked for a pension fund; and one person works for an institution that monitors the financial sector.

Employees who work on sustainability issues have been chosen, since they have the most information on the topic of this thesis and since they have some distance to the main operations of their institutions. This should place them in the perfect position to have a lot of insider information and a critical attitude simultaneously. Managers who participate in initiatives in which multiple financial institutions cooperate were included, like the Dutch Platform Carbon Accounting Financials, since they have information that goes beyond their own organization. This applies to Jeroen Loots, Marleen Janssen-Groesbeek and Pieter van Stijn.

Reflecting on the choice of interviewees, the interviews with the representatives of the divestment movement turned out to be less useful. This research focuses on the financial sector, however the divestment movement is not focused on engaging with financial institutions. On the other hand, interviewing people from both the divestment and Carbon Tracker has gained interesting insights in the interaction between their strategies and how they amplify each other. In retro perspective, it would also have been interesting to interview a trader or relation manager to see if they are less convinced about the stranded assets risk than people working for the sustainability department.

Some interviewees are cited many times in this research and others only once, or in one case not at all. This is caused by the fact that some interviewees have provided more illustrative examples than others. The conclusions of this research are based on all interviews.

The risk of interviewing high-level employees is that interviewees will engage in strategic reconstruction: they will answer in ways that secure their legitimacy and the legitimacy of their organizations. This is especially true when they are asked about situations in which the interests of the organization have prevailed above the interests of society, which is often the case in politics (Rathbun, 2008). Since financial institutions enjoy limited trust from society (Banken.nl, 2018), the chance that interviewees will say something that puts their organizations in a bad light is small. This is a disadvantage of interviewing. This research aims to investigate whether financial institutions are telling the truth in their public statements by comparing them to interviewee statements, however the risk exists that respondents will also tell PR approved stories during the interviews.

Rathbun (2008, p. 693) provides a few interview techniques that can mitigate this risk. Researchers can express their acceptance of unflattering alternative motives, use euphemisms to describe behaviour or ask for evidence when the given answers are believed to be socially desirable. The interviews with critical experts from VBDO and Avans Hogeschool also serve to check the statements of those working in the sector.

To avoid misinterpretation, a summary of the most important findings was sent to all interviewees for a final check. All interviews were recorded, so that exact citations could be used in this thesis. The citations were shared with the interviewees, so that they could choose whether the citations were used anonymously or attributed to them. The interviewees were not allowed to change the citations afterwards to avoid strategic reconstruction.

Chapter 4

Results

This chapter presents the results of this research. It discusses the thought process I have gone through while studying this research subject. Paragraph 4.1 demonstrates that on the first glance, the financial sector seems to have adopted the stranded assets narrative. Financial institutions have initiated numerable platforms and initiatives to deal with climate-related risks, carbon disclosure and target setting. These initiatives draw attention to the progress financial institutions make on their path to sustainability.

While delving into the case by means of a document analysis and interviews, I found out that the adoption of the stranded assets narrative, and in a wider sense the narrative of sustainability, is mostly superficial. The carbon disclosure initiatives (TCFD, PCAF and Terra) lack any form of target setting, as became clear from their reports. Many reports have been written, but so far little action has been undertaken. The reports present recommendations, but there are no binding rules or enforcement mechanisms. In paragraph 4.2, it is therefore argued that these platforms can be regarded as a paper tiger. The single exception to the rule is the coal industry, as described in paragraph 4.3. Here one can observe concrete action: financial institutions are divesting from coal companies.

The carbon bubble frame might have caused a minor shift in language, however investments in the oil and gas sector remain unchanged. Financial institutions do not see the carbon bubble risks as a real threat to their oil and gas investments. The interviews made clear why there is a lack of action. The three reasons are presented in paragraph 4.4. In paragraph 4.5 the findings of this research are linked to the theories found in the literature.

4.1 Wind of change

Both Carbon Tracker Initiative and financial institutions are presenting a discourse of success, implying that the financial sector is seeing a wind of change and that they are part of the solution of the climate change problem.

Carbon Tracker Initiative states on its website that ‘it has cemented the terms “carbon bubble”, “unburnable carbon” and “stranded assets” into the financial and environmental lexicon’ (Carbon Tracker Initiative, n.d.). The website cites a The Guardian article by Jackie Wills in which he writes

that ‘Carbon Tracker has changed the financial language of climate change’ (Wills, 2014). Carbon Tracker backs this statement by referring, amongst others, to the 22 shareholder resolutions² in 2018 that made use of Carbon Tracker’s research reports. These shareholder resolutions asked fossil fuel companies like ExxonMobil and Occidental Petroleum to describe how their businesses are aligned with a 2 degree scenario. Carbon Tracker’s website also cites the major insurance company AXA, which says that ‘the compelling stranded assets narrative’ and the research of Carbon Tracker has directly influenced their decision to divest from coal in 2015 (Carbon Tracker Initiative, n.d.).

In 2015, Bank of England governor Mark Carney referred to Carbon Tracker research reports and their term ‘stranded assets’ in a speech he held for the UK insurance sector. He warned investors of the risk of stranded assets, arguing that the cost for UK investors could be huge. As a chairman of the Financial Stability Board, the international authority that monitors the global financial system, he founded the Taskforce on Climate-related Financial Disclosures (TCFD). It aims to introduce scenario analysis into risk assessment of financial institutions so that they incorporate long-term climate-related risks as well. Carbon Tracker applauds the establishment of the TCFD, stating on its website that the TCFD is ‘the recognition of the financial significance of climate risk we were aiming for’ (Carbon Tracker Initiative, n.d.).

In May 2018, a group of sixteen European large banks and the United Nations Environmental Program Finance Initiative (UNEP Finance) published their report *Extending Our Horizons* in which they apply the TCFD recommendations to the financial sector. In this report they present the disclosure methodology for climate-related risks which was developed for financial institutions. The reports says that the stranded assets risk is one of the risks that should be taken into account (Oliver Wyman and UNEP Finance Initiative, 2018, p. 33). The authors recommend all financial institutions to use this methodology to report on climate-related risks.

In the foreword of the report financial institutions articulate their commitment to disclosing climate-related risks. For example, Bas Rüter, director of Sustainability of the Dutch bank Rabobank says:

‘Assisting in the realization of the Paris Agreement is part of our operational compass. Adequately managing the associated transitional risks is part and parcel of this commitment.’

(Oliver Wyman and UNEP Finance Initiative, 2018, p. 4)

² Companies with shareholders are required to hold annual general meetings every year, in which the board is approved and important future policies are shared. Shareholders can file resolutions, for example to ask for stricter environmental policies, and there will a vote on these resolutions in which all shareholders can vote.

Another example is the statement by Ida Lerner, Group Executive Vice President for Risk Management at DNB:

‘If banks understand and integrate climate risk, we will improve overall credit risk and responsible decision-making. The UNEP FI pilot has been essential to realize the hard work ahead required from us as banks to truly understand the risks and opportunities associated with climate change. DNB will continue to integrate the methodologies developed into our daily activities as the financial sector is part of the solution.’

(Oliver Wyman and UNEP Finance Initiative, 2018, p. 4)

In all of the seventeen statements, high-level employees of financial institutions state the urgency to solve the problem of climate change and the commitment of the financial institutions to improve reporting on climate-related risks.

The UN-supported Principles for Responsible Investment (PRI) Initiative³ is warning investors that stricter climate policies by governments are on their way. They refer to this as ‘the inevitable policy response’, arguing that governments will install many climate regulations between 2025 and 2030 to compensate for the lack of action before 2025. PRI strongly recommends investors to prepare adequately for these policies, starting today. They argue that the management of stranded assets is an important part of this (Principles for Responsible Investment, 2018). On its website, PRI also claims that the idea that some fossil fuel company assets will become stranded is well accepted, including by some oil and gas companies themselves (Principles of Responsible Investment, 2017).

Looking at the Dutch context a shift can be observed towards more awareness on climate-related risks as well. De Nederlandsche Bank (DNB), the Dutch central bank, has repeatedly warned of the carbon bubble risk in the media, via research reports and in the parliament (Trommelen, 2015; Schotten, van Ewijk, Regelink, Dicou, & Kakes, 2016; Beunderman, 2017; Regelink, Reinders, Vleeschhouwer, & van de Wiel, 2017).

Dutch banks are less vocal about the carbon bubble risk. One exception is ABN Amro CEO Kees van Dijkhuizen who referred to the risk of stranded assets when defending his sustainability strategy in newspaper De Volkskrant (Haegens, 2018). On their websites, the major Dutch banks ING, ABN Amro and Rabobank report abundantly about their efforts on becoming sustainable and climate-friendly. Two important facets they publish about are their divestment from the coal industry; and their

³ PRI Initiative is an organizational platform that has 1800 financial institutions as signatories and that aims to help these signatories to implement the principles of responsible investment.

efforts at carbon disclosure of their balances and target setting to steer their money away from carbon-intensive businesses.

ING stated in September 2018: 'ING will steer portfolio towards two-degree goal to help combat climate change' (ING, 2018a). Rabobank claims: 'The bank stopped investing in energy from fossil fuels many years ago. No less than 99% (€3.5 billion) of our investments in energy production focus on sustainable energy' (Rabobank, 2016). Many Dutch financial institutions have signed the Dutch Carbon Pledge, in which they write: 'As financial institutions we want to take responsibility as well and come with new and meaningful steps' (Platform for Carbon Accounting Financials, 2015). The banks say they take responsibility for stopping climate change and publish about the measures they have taken.

The banks are developing uniform methodologies to measure carbon exposure: ING has developed the Terra method, the other Dutch banks are united in the Platform for Carbon Accounting Financials (PCAF) and are developing the PCAF method. In November 2018, Dutch bank ABN Amro announced that all Dutch banks, including the major banks ING, ABN Amro and Rabobank, will set concrete targets for lowering the carbon intensity of their assets and loans before the end of the year (Haegens & Smit, 2018). This means that the carbon disclosure will soon be met with concrete targets.

Although they are not explicitly talking about 'stranded assets' or the 'carbon bubble', they are introducing the measures Carbon Tracker Initiative is advocating for: divestment from coal and carbon disclosure combined with target setting. It seems like the sector is seeing a wind of change.

4.2 Platforms: a paper tiger?

The sector's initiatives TCFD, Terra and PCAF suggest that financial institutions take their role in the transition to a low-carbon economy seriously. In this section, the reports of these initiatives are analysed to examine to what extent content matches appearance.

The Taskforce on Climate-related Financial Disclosures (TCFD) urges banks to use scenario analysis to estimate climate-related risks. A group of sixteen European banks has implemented this recommendation and has published the report *Extending Our Horizons* in which they present a methodology to measure physical and transition risks related to climate change. Stranded assets are acknowledged as a transition risk and thus as something that banks should anticipate on.

The TCFD was set up by the Financial Stability Board, the authority on global finance. This report is written by a group of influential European banks in cooperation with UNEP Finance. These

authoritative institutions give status to the report. Interviews and reports made clear that the terms physical and transition risks as used in this report are now mainstream terms for financial institutions. Interviewees have also stated that a lot of banks are now incorporating the TCFD recommendations, regarding this as a promising development. The impact of this report is thus potentially significant.

However, interviewees indicate that the methodology this report proposes is very complicated. Chances are that financial institutions find this method too time-consuming and therefore refuse to use it. Banks are not obliged to use the TCFD recommendations. It is therefore questionable whether this report will make an actual impact in investment practices.

The Platform for Carbon Accounting Financials (PCAF) is a Dutch initiative led by ASN Bank and comprising several Dutch banks, pension funds, asset manager MN and the Dutch Development Bank. It is developing a uniform mechanism to report carbon footprints of investment portfolios. PCAF distinguishes between reporting of carbon footprints, monitoring changes in these footprints and steering, which means that investors reduce the carbon footprint of their portfolios. Investors can steer by motivating the businesses in their investment portfolio to reduce their footprint or by withdrawing their money from carbon-intensive businesses. PCAF states that it supports investors to engage in steering. However, it does not set specific targets for reducing the carbon footprints of portfolios. In the report PCAF writes:

‘In general, PCAF members support the ultimate objective that financial institutions should exert their influence (through asset allocation and active ownership) to accelerate the transition to a low-carbon economy.’

(Platform for Carbon Accounting Financials, 2017, p. 7)

PCAF repeatedly states that it supports this ‘ultimate objective’, but does not set any targets to achieve it.

PCAF states that its activities are not only based on moral arguments, but also on self-interest since ‘decreasing exposure to carbon-related risks is increasingly viewed as making good business sense’. This might point to the risk of stranded assets. The reports does not explicitly mention the risk on stranded assets. Interviewees however have said that one of the reasons that PCAF is measuring carbon footprints of investment portfolios is to deal with the risk of stranded assets.

The respondents in this research have pointed to another disclosure mechanism called Terra that is currently being developed by the Dutch bank ING. The Terra methodology focuses on the technologies that need to be developed for the transition to a low-carbon society. It uses scenarios

of the International Energy Agency to determine the necessary shift in technologies that different climate scenarios ask for, and compare these with the actual technologies companies use today and plan to use in the future. These comparisons are made for the most polluting sectors: energy, automotive, shipping and aviation, steel, cement, residential mortgages and commercial real estate. ING writes:

‘Where relevant, we’ll look at whether individual clients have a strategy to adequately shift away from greenhouse-gas-intensive technologies towards greener technology. We’ll support clients on their path to a sustainable future and are seeking to support potential clients that are contributing to the technology shift needed. We measure our loan book to see whether it’s aligned with the shift to a low-carbon society.’

(ING, 2018b)

ING states here that it will help its current clients to switch to greener technologies and that it is looking for new clients that develop these green technologies. However, no specified targets are set in the Terra method. Next to Terra, ING has formulated a target for thermal coal: in 2025, ING will stop financing utility companies that rely for more than 5 % on thermal-coal power generation. For gas and oil, ING has not set any targets.

The underlying assumptions behind ING’s climate policies are set out elsewhere in the text: *‘The Paris Agreement is about balancing the climate and the economy. In other words, in order to safeguard the global economy, the world must accept a certain level of climate change.’* In other words, ING believes that the climate has to adapt to the global economy instead of the other way around. ING also cites the International Energy Agency’s forecast that energy demand will increase with 30 percent in 2040 and that half of this demand will be met by fossil fuels. ING states that green energy sources will not be able to meet the increased energy demand and thus concludes that investing in fossil fuel companies is inevitable.

The effectivity of the TCFD, PCAF and Terra methodologies cannot be evaluated yet, since they are all relatively new at the time of writing of this thesis. The TCFD and PCAF platforms were founded in 2015 and they only published their first reports in 2017; ING published the first version of the Terra methodology in 2018. All methodologies are still under development. The fact that all three platforms describe completely different methodologies also indicates that the industry is in the first phase of developing a method for carbon disclosure and that there is no uniform standard yet. In the next ten years it will become clear whether disclosure on carbon-intensive industries will lead to a shift in investment decisions. Some respondents are quite optimistic about this. One interviewee

who works for a financial institution⁴, puts it as follows: *'Right now, they are determining what is on their balances. In the future, this will form the basis for their decisions. That will just happen, even without them making active decisions. There will be questions from the public, and often this means the beginning of a shift in the right direction.'* In the interviewee's perspective, disclosure automatically leads to a shift in investments away from carbon-intensive industries.

The majority of interviewees is however much more sceptical. They say that financial institutions have been reporting on carbon-intensity and climate risks for many years without taking any action. They see that these new initiatives are about disclosing information, but that they do not set targets for taking action. They therefore expect that information disclosure will not be met by actual decreasing investments. They think that financial institutions engage in the time-consuming development of an uniform disclosure methodology to delay the process, so that they can keep investing in oil and gas companies in the meantime. They see a lot of platforms and reports on stopping climate change, but without specific targets being set, as none of the above mentioned platforms do, these platforms only contribute to the paper tiger in the sector.

Some interviewees from within the sector state that the financial institutions use these platforms to protect their reputation. Their argument is as follows: public opinion is becoming more negative towards fossil fuel companies, so financial institutions that have not changed their policy towards fossil fuel companies still want the public to think they are re-evaluating their investments in fossil fuels, taking public opinion and climate action seriously. This kind of statements add to the notion that platforms are a paper tiger.

4.3 Goodbye coal

In discussing how the financial sector deals with fossil fuel companies, an important distinction should be made between coal on the one hand and oil and gas on the other hand. Even the most sceptical interviewee acknowledges that the sector is bidding farewell to coal. For the coal industry, we can observe an actual change in behaviour and not only a change in language. In January 2017, the Dutch bank Rabobank stopped providing new loans to the coal industry (Rabobank, 2017). In 2018, the Dutch banks ING and ABN Amro followed and ceased to provide new loans to coal-fired power plants (ING, 2017; ABN Amro, n.d.)⁵. Other major European banks (e.g. HSBC, Deutsche Bank and Royal Bank of Scotland) have ceased lending for new coal mines as well.

⁴ This interviewee wishes to be cited anonymously.

⁵ ING excludes all clients that are over 5 % reliant on coal fired power in their energy mix.

Interviewees see coal as a business in decay. They state that financial institutions have been anticipating stricter regulations for coal around the world and, in the Dutch context, the announced closure of Dutch coal-fired power plants. The interviewees cite that coal is the most polluting form of energy and that coal companies cannot easily transform themselves into green energy companies. Another reason mentioned by interviewees is that coal companies are mostly financed by bank loans which run for around 5 to 10 years. Banks are therefore anticipating new coal state regulations on a time horizon of 10 years, while asset managers, who provide finance to oil and gas companies, do not because they can sell their assets any time.

Nonetheless, this trend of divestment from coal companies may be nuanced by a remark made by Henrik Jeppesen of Carbon Tracker Initiative. He states that only a few new coal plants were built in Europe and the United States in the last 15 to 20 years, because both public opinion and legislators recognized the disadvantages of the very polluting coal industry. *'So the question is: how much business did banks actually give up on?'* Here Jeppesen indicates that the financial sector did not cause the withdraw from coal by divestment, but simply followed society's withdrawal.

Since coal reserves form a large part of the proven fossil fuel reserves that cause the carbon bubble, as can be seen in Figure 4.1, this shift away from coal is nevertheless an important development.

Comparison of the global 2°C carbon budget with fossil fuel reserves CO₂ emissions potential

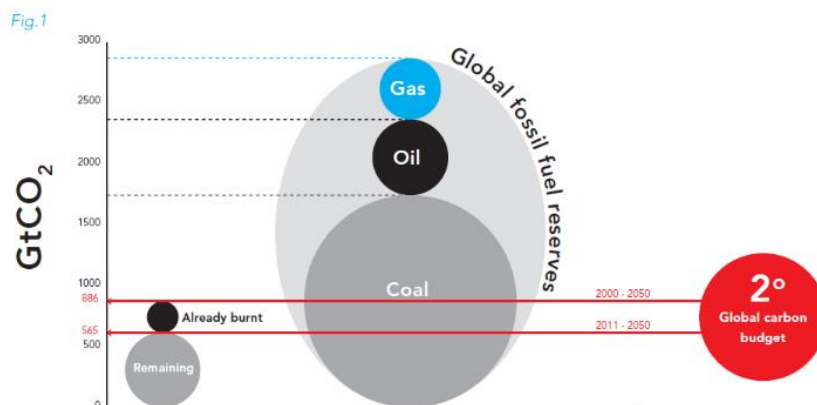


Figure 4.1 Global fossil fuel reserves. Copied from *Unburnable Carbon* (p. 6) (Research Report) by Carbon Tracker Initiative (2011).

4.4 No real impact

As we have learned in the previous paragraph, several major European banks have ceased to lend money to coal companies. For the oil and gas sector no similar commitments are made. In the

Netherlands only two small banks Triodos and ASN Bank refrain from investing in the fossil fuel industry, including oil and gas. Interviewees confirm that there is no decline in investments in or lending to oil and gas companies.

This means that financial institutions have not really adopted the stranded assets narrative. If they were convinced of the risks of stranded assets, they would take measures for their oil and gas investments as well. Interviewees indeed indicate that they do not see the stranded assets risk as a real threat to their oil and gas investments.

This is not to say that the carbon bubble narrative has not made an impact at all. All interviewees are familiar with the term ‘carbon bubble’ and ‘stranded assets’ and they indicate that their colleagues are as well. Some interviewees state that stranded assets are becoming part of conversations on risks, although they might not be a first priority. Other interviewees state that stranded assets are not yet taken into account in risk conversations, because data on the stranded assets risk for particular companies is lacking. They point to the TCFD methodology that is being developed to measure climate-related risks at company-level, including the risk of stranded assets. As soon as this data is known, the stranded asset risk will be taken into account, these interviewees say. This indicates that the stranded assets risk is known to financial institution employees, although they are not convinced of its urgency. Still, it seems that a minor shift in language has taken place.

Interviewees give several reasons why the carbon bubble narrative has not caused the sector-wide change it dictates. These reasons can be split into three categories, as described in the following paragraphs.

4.4.1 Low expectation of state regulation

A few interviewees point out that the stranded assets narrative assumes that governments will install Paris-compliant climate policies. The interviewees are not sure if this assumption is correct. One interviewee who works for a financial institution⁶ states: *‘Stranded assets only become stranded if the government says they are. Until then, they are not stranded. [...] We can burn the whole earth down in flames if the government, the public does not put a halt to it at some point.’* This person claims that stranded assets are often perceived as ‘a technocratic issue’, something that will happen for certain. However, he says it should be viewed as a political issue, because the government has to install policies before assets become stranded. *‘There is a notion of stranded assets [in the sector]. It*

⁶ This interviewee wishes to be cited anonymously.

is on our radar, but it is small and far away, because right now we do not expect that the government will take firm action.'

The stranded assets narrative is based on the assumption that the government will introduce firm regulation in the near future. Many interviewees state that there is not such a threat of nearby state regulation, which makes the stranded assets narrative less convincing. Many financial institutions do not believe that states will keep the maximum rise of the earth's temperature within two degrees as they have committed to in the Paris agreement. This applies to governments in general and the Dutch government in particular. The financial institutions observe that the Dutch government has no strong vision on climate change policy. The Dutch tradition of *polderen*, in which policies are drafted in consultation with businesses and civil society, is considered as a constraint. The negotiations for climate change policy (*Klimaattafels*) are perceived as time-consuming and ineffective. Businesses should not be involved in drafting climate change regulations, interviewees from within and outside the financial sector argue. Their argument goes as follows: climate change requires a government that implements strong climate policies, which will be very costly for some businesses or even whole sectors. Hence, drafting policies together with these businesses is unrealistic, as these companies will not agree with policies that harm their business. Another reason that is mentioned is that the green parties in the Netherlands are not influential. The coalition parties, especially the liberal party VVD and the christen democrat party CDA, do not give priority to climate change policies.

4.4.2 Institutional logics

The stranded assets narrative clashes with several institutional logics of the financial sector. This makes the narrative less convincing to financial sector employees. The next section will deal with the institutional logics that conflict with the stranded assets narrative.

First of all, almost all interviewees point to the short time horizons the financial sector. They point out that financial institutions hardly contemplate long term issues, which makes them less sensitive to long term challenges like climate change and the risk on stranded assets. Interviewees state that time horizons vary, but are too short in general to consider the stranded assets risk. Loans mostly involve contracts that last for 10 years. Banks do not believe governments will implement restricting policies on oil or gas in the coming ten or even twenty years, so they see no risk in agreeing on a 10 year lending contract with an oil or gas company. Asset managers are able to sell their assets any time so their time horizons stretch for a month or three months, dependent on when they have to report their performances to their bosses. Yossi Cadan of 350.org says: *'I think that our financial system and our capitalist system are still running on the premise of short term gains instead of long term gains. Everybody thinks: "When the crisis comes I will be out in time".'* Apart from the limited

time horizons, Cadan also describes the individual mindset of bankers: they only consider their own investments, of which they are convinced they will sell them in time. They are not concerned about the future of the sector or about others' investments.

Interviewees indicate that financial institutions use decision making models that weigh risk, returns and other variables to decide which investments they will make. Long-term risks, like climate change, are very difficult to incorporate in these models, just like non-financial information. *'They do not know how to translate these non-financial factors into numbers. So non-financial factors are always ad-hoc, exogenous factors that appear out of nothing for those who are focused on decision making models. Even when these forest fires or failed harvests have been in the news for weeks'* (Marleen Janssen-Groesbeek, Avans Hogeschool, interview 17-10-2018).

Maximizing returns is the number one priority for asset managers, several interviewees state. That is what they get paid for, and the basis on which their performance is judged. When they invest other people's funds, it is even their legal duty, fiduciary duty, to maximize returns. Since fossil fuels deliver high returns on the short term, as all interviewees indicate, they are seen as a good investment case and therefore part of many investment portfolios.

Two interviewees point out that the main task of their institution is sometimes in conflict with climate action goals. In this case the main task of their institution has priority above preventing climate change. One interviewee states: *'In the end we are monitoring the financial sector, not the climate. That is our primary concern. We have to translate risks into financial risks. Something that harms the environment is not per definition a measurable, financial risk.'* Followed by: *'I do not think that we should force all financial institutions to sell their brown investments today. That would create a lot of instability. We want a gradual transition. It should not go too slow, no, but it should not go too fast either, because that creates instability in the economy.'*

The stability of the climate requires a very fast transition. Many environmentalists argue that society has already waited too long without taking action. According to the interviewee, a fast transition harms the stability of the economy. The economy and the climate thus ask for conflicting policies. The interviewee makes clear that she prioritizes the stability of the economy, because securing economic stability is the main task of the financial institution she works for.

Pieter van Stijn (Bank of Montreal, previously working for the Dutch pension manager PGGM) states about pension funds: *'Pension funds have not been founded to save the world, but to secure pensions for the people. They [the beneficiaries] say 'if I wanted to support a charity, I will give them the money myself, my pension fund does not have to do that'. [...] If a pension fund divests certain assets*

because of their climate impact and as a consequence it has to cut pension payments, then you are not doing your job well.' This statement of Pieter van Stijn has a similar conclusion as the statement before. He emphasizes that his institution has a main task: delivering pensions. If this task conflicts with climate action goals, securing pensions is prioritized above stopping climate change.

Another institutional logic is that financial institution employees tend to take big risks when making investment choices. When it comes to banks, two interviewees Marleen Janssen-Groesbeek of Avans Hogeschool and Jeroen Loots of ASN Bank say that large banks are 'too big to fail', which causes their employees to be less sensitive to the risks they are taking. Interviewees explain this as follows: bank employees expect that when their bank's financial situation turns precarious, the bank will be saved by the government again, as happened during the last financial crisis. Therefore, the employees feel like they are not taking risks with their banks' money but with the money of Dutch tax payers. A similar logic applies to asset managers, interviewees say. Asset managers do not invest their own money, but the money of pension beneficiaries, for example. This creates distance which leads to higher risk taking.

4.4.3 'We want to, but we can't'

The interviews make clear that portraying financial institutions as unwilling to divest from fossil fuels is a simplification of reality. Interviewees mention several factors that explain why divesting is not the straightforward solution that it might seem. In particular two interviewees from financial institutions emphasize factors that make fossil fuel divestment challenging.

As one anonymous interviewee describes it: 'Say, you divest completely from the fossil fuel industry, where do you put your money then? You can only divest if there are enough alternatives to reinvest your money in. And what I have seen is that every time a green obligation is brought to the market, it is sold in no time. The demand for green investments is very big, much bigger than the supply at the moment.'

This interviewee refers to the lack of alternatives for fossil fuel investments. This person says renewable energy is not yet able to replace fossil fuel energy, because the total supply of renewables is too small to meet the energy demand. This argument was also mentioned by Pieter van Stijn of BMO Asset Management and Maarten Biermans of Rabobank. In addition, these interviewees point to the growing global energy demand and the fact that the technologies to store solar and wind power have not been developed yet. Looking at the massive consumption of energy and plastic, they conclude that the world still runs on oil and gas. They also argue that since the financial sector is serving the real economy, they cannot avoid investments in oil and gas.

Another point these interviewees mention is that investing in green technologies is risky, because it is uncertain which green technologies will be most important in the future. They state that policy uncertainty has partially caused obscurity, as the government has not developed a vision on a clear transition pathway. *'No one knows what the energy mix of the future will look like, what the transition trajectories look like or how fast they will be, no one knows how committed the government is..'* (Anonymous interviewee that works for a financial institution, interview 24-12-2018)

Interviewees from within and outside the sector point to the fact that climate change is a global problem and that the power of Dutch banks within global finance is only limited, especially since these banks have sold parts of their businesses during the last financial crisis. The interviewees say Dutch banks are too limited in size to have an impact on the world's energy mix. *'You need the BlackRocks, Goldman Sachs, the Chinese banks to steer the giant amounts of money that flow around the world daily in the right direction'* (Marleen Janssen-Groesbeek, Avans Hogeschool, interview 17-10-2018). This is why Henrik Jeppesen of Carbon Tracker Initiative and Pieter van Stijn of Bank of Montreal and former PGGM argue for shareholder engagement instead of divestment of fossil fuel assets. If an investor sells his or her fossil fuel assets, another investor will buy it and nothing has changed, they both argue.

4.5 Analysis

The previous paragraphs sum up the factors that prevented the stranded assets narrative from having a real impact on the financial sector. From all the factors mentioned above, three are the most important: financial institutions have a low expectation of strong governmental climate regulation in the coming twenty years, the short termism in the sector makes them insensitive for long-term risks and their belief that the demand for fossil fuels will continue for the next decades is strong.

In the next paragraphs, these findings are linked to the theories described in chapter 2: the theory of competing ideas, legitimacy theory and network theory. Paragraph 4.5.4 and 4.5.5 discuss some additional findings, linked to the dominant collective action discourse and the radical flank effect.

4.5.1 Theory of competing ideas

Strong evidence has been found that the causal mechanism derived from the theory of competing ideas is present in this case. The theory of competing ideas describes how social movements use framing to change the perception of interests of their target groups. It also describes how new frames have to compete with dominant norms and ideas (Finnemore & Sikkink, 1998). The dominant norm has created logics of appropriateness and interest that favour the dominant norm and might

conflict with the new norm. Strong evidence has been found that this is what happened when Carbon Tracker tried to convince financial sector employees of the stranded assets risk. The stranded assets narrative clashes with the dominant norms, beliefs and values in the financial sector and is therefore less convincing to financial institutions.

When one of the interviewees, Marleen Janssen-Groesbeek, lector Sustainable Finance at Avans Hogeschool, explained why asset owners are still investing in fossil fuels, she said: *'They have been invested in these reliable companies for a long time, which makes it very difficult to say goodbye. Fossil fuel companies pay large dividends, which gives the asset owners a certain return on investment independent of the stock price. It is an easy way to make money.'*

All interviewees say similar things: fossil fuel companies are a very reliable investment case, always paying a high dividend, even during war. Therefore fossil fuel companies have been a substantial part of many investment portfolios for a long time. When Carbon Tracker published their report on the risks of investing in fossil fuel companies and spread these ideas into the financial sector, these ideas did not enter a normative vacuum in the minds of financial sector employees. Rather, they had to compete with the existing ideas on fossil fuel companies. Bankers do not view fossil fuel companies as neutral assets, but as a *first-class investment opportunity*. Carbon Tracker's claim that investing in these companies is a risky business has to compete with this positive perception of fossil fuel companies. This positive perception is the dominant discourse on fossil fuel companies, but not the only one. Financial institutions and their employees are aware of climate change and the fact that burning fossil fuels causes climate change, so the negative aspects of fossil fuel companies are also well known. There are many initiatives in the sector that try to limit the sector's contribution to climate change. However, preventing climate change does not fit well with the ideas and norms that dominate the financial sector.

Financial institutions are commercial institutions that want to make profit. They want to maximize returns on investments and operate within very short time horizons. These ideas form the business model of the financial sector. They form the basis of the economic models on which the financial sector bases their decisions. The narrative of stranded assets that Carbon Tracker has coined asks for a long term perspective and for economic models that take into account non-financial information. Financial institutions have neither which makes the stranded assets narrative less convincing to them.

As described by the theory of competing ideas, dominant norms have created logics of appropriateness and interest that favour the dominant norm. This mechanism is present in this case

as well. Maximizing returns is the dominant norm in the financial sector. This has led to short termism and the need to invest in companies with high returns. In the short-term fossil fuel companies provide reliable and high returns, whereas green alternatives are uncertain, risky investments. Therefore, financial institutions invest in fossil fuel companies. Because financial institutions keep investing in fossil fuel companies instead of green energy companies, the latter remain 'new, risky investments'. Under all these beliefs lies the assumption that our societies' welfare depend on the growth of the economy and that we should thus always strive for economic growth, even if this harms the stability of the climate. These beliefs form a well-knitted view on the future of energy. The narrative of stranded assets is disruptive to existent ideas and therefore less accepted.

4.5.2 Legitimacy theory

Although there is no strong evidence for it, yet some indications have been found that the causal mechanism derived from legitimacy theory is present in this case. Legitimacy theorists (Ashforth & Gibbs, 1990) argue that organizations adopt new narratives in their public statements for reputation concerns. They argue that organizations often use symbolic management to repair their reputation. Symbolic management means that organizations communicate changes while actual change is lacking.

The document analysis and interviews make clear that financial institutions have published a lot of reports about climate-related policies while in fact their investments in the fossil fuel industry – except for the coal industry – are maintained. Financial institutions are developing methodologies such as the TCFD, PCAF and Terra to limit their exposure to carbon-intensive businesses. However, these methodologies fail to set targets and can therefore be seen as a paper tiger, as described in detail in paragraph 4.2. Financial institutions have only developed divestment policies for coal companies and not for oil and gas companies. Some of the interviewees indicate that oil and gas divestment will be the next step, but the majority of interviewees says that it will not happen in the next few decades. This postponement is not described in the public reports, which speak with high urgency about solving climate change. However, during the interviews, financial sector employees indicate that stopping climate change is not their institutions' first priority.

There is thus a gap between the urgent language financial institutions use in their public statements one the one hand, and the actual attitude of the institutions and the measures they take to prevent climate change on the other hand. This gap suggests that while financial institutions are not yet making radical changes and taking their full responsibility in solving the climate change problem, they

want to make the public believe they are. This is an indication that the mechanism of symbolic management is present in this case.

When interviewees are asked whether reputation concerns play a role for financial institutions, most of them confirm. Among them are one anonymous interviewee who works for a financial institution, Xander Urbach of VBDO and three representatives of the carbon bubble movement. There is only one interviewee⁷, from outside the financial sector, who directly confirms the legitimacy hypothesis, saying that financial institutions use communication to appease public opinion:

'They [financial institutions] will probably make minor changes that look major to appease public opinion. PR will do the trick. That is what Shell does as well: they feel that sustainability becomes more important for the public and in reaction they put on a beautiful masker. You can accomplish a lot with communication.'

The other five interviewees speak in more general terms about reputation, arguing it plays a big role for financial institutions. For example one anonymous interviewee who works for a financial institution says:

'When a NGO publishes a report about certain investments, related to climate change or palm oil for example, citizens will read it and ask questions about it. For financial institutions that is a very important incentive to take some action.'

No strong direct evidence has thus been found that confirms the legitimacy hypothesis. However, there is an observed gap between the language in public statements on the one hand and the actual attitude and behaviour of financial institutions on the other hand; and six interviewees say that reputation plays a big role for financial institutions, one of them directly confirming that financial institutions communicate change to appease public opinion. These are indications that legitimacy theory plays a role in explaining why financial institutions have adopted the carbon bubble frame in their public statements.

4.5.3 Network theory

From the interview data, no final conclusion can be drawn on network theory. No conclusive evidence has been found that network relations explain why the carbon bubble frame has not been adopted by financial institutions, because this explanation has not been substantially tested.

⁷ This interviewee wishes to be cited anonymously.

Therefore, it cannot be confirmed nor rejected that network relations play a role in explaining this case. Some of the answers from interviewees will be discussed in the following section.

One part of network theory argues that the relations in which actors are embedded influence their views and behaviour. When specifically asked about the relations of financial institutions, the interviewees gave mixed answers. Most interviewees state that relations might have an impact in some way, but that it is not the most determining factor.

One interviewee, Marleen Janssen-Groesbeek, lector Sustainable Finance of Avans Hogeschool, states that relations between fossil fuel companies and banks do not play a role at all. *'Well, they are bank and client. I do not think fossil fuel companies talk to their banks every day or that they have a certain relationship.'* When asked whether fossil fuel companies might be more convincing to banks than the environmental movement, because they share more characteristics with each other, she put aside this hypothesis completely. *'That is not a good comparison. For banks it is all about credit risk: is the interest rate appropriate compared to the risk and will the company pay back its loan in time. In that sense lending money to a green energy company is not different from lending money to a fossil fuel company.'*

Another interviewee who works for a financial institution⁸ has a more nuanced view. This person states that banks and fossil fuel companies have built a relationship, because the companies have been clients of the banks for years and they have been in contact regularly. However, this is not decisive for decisions made by the board. When the board decides to divest from coal, this is led by economic future scenarios and a decreasing profitability of the sector. The bank's relation managers that work with these companies might be unhappy with this decision and might argue for alternative policies, but in the end this is not decisive, according to the interviewee.

Another hypothesis that can be derived from network theory is that how actors are perceived determines whether their messages are taken seriously. Interviewees were asked if financial institutions perceive Carbon Tracker Initiative as reliable and if this influences the impact Carbon Tracker has. Two interviewees say this certainly has an impact, others did not know or were not asked this question due to limited time. On the question how Carbon Tracker is perceived, the answers vary widely. Three interviewees say that they are seen as an objective think tank, two interviewees say that they are seen as an activist NGO and one interviewee says they are a mix of

⁸ This interviewee wants to be cited anonymously.

both. Due to this variety in answers, no conclusion can be drawn on whether financial institutions' perception of Carbon Tracker has had an impact.

Another question asked a few times was what the interviewees considered as more important for the adoption of the stranded assets narrative: its content or the networks via which this narrative was potentially spread? This question did not really trigger interesting answers. One interviewee answered by saying that 'it is a combination of several factors', including the Paris agreement and the fact that we are starting to experience physical consequences of climate change.

None of the interviewees brought network relations up as explanation why the carbon bubble frame has not been adopted by financial institutions. When asked about this explanation, their answers were contradicting each other and sometimes vague or inconsistent. Therefore, I decided to focus on the other two theoretical explanations.

The interviews made clear that network research is complicated: you need to ask several questions to find the right answer. Since the other explanations also needed to be investigated during the interviews, there was a lack of time. Only a few questions on network theory were asked that resulted in an incomplete and inconsistent picture. No conclusive evidence has thus been found on network theory.

4.5.4 Collective action discourse

The analysis of the interviews made clear that financial sector employees still consider collective action problems as a big constraint for taking climate action. The collective action problem frame is still the dominant discourse. The carbon bubble movement has not been able to replace it with their new frame.

The carbon bubble movement tries to spread a narrative in which fossil fuel assets are bad investments. They try to convince investors that it is in their own financial interest to sell their fossil fuel assets, because these assets will be worthless in the future and the investors will lose their money. Especially Carbon Tracker Initiative has moved away from the moral argument to divest from fossil fuels, focusing solely on this financial argument, backing it with financial analyses.

The previous paragraphs describe that financial sector employees do not find this narrative convincing. They see fossil fuel assets as a world-class investment: it has a high reliability because it has a history of paying high returns. They argue it is in their economic interest to keep these assets. They acknowledge that it would be better for the climate to stop investing in fossil fuels, but that would require collective action of all investors and that is hard to achieve, because there are always investors without moral concerns that are happy to buy fossil fuel assets.

Pieter van Stijn, director Governance and Sustainable Investment at Bank of Montreal Global Asset Management, describes how this problem affects investors:

'You can choose to divest [from fossil fuels], if you find it unethical to make money from fossil fuels. You make a political statement, saying: "We do not want anything to do with fossil fuels". Then you think you have a green pension fund, but you have sold your assets to someone else, so nothing has changed on a global scale. The world has not become any greener.'

Pieter van Stijn describes how the global scale of the problem makes individual action ineffective. Only if all investors would cooperate and collectively stop investing in fossil fuels, it would have a real impact. Since there is still a big group of investors who are willing to buy fossil fuel assets, individual action is ineffective. Therefore, individuals who would be willing to divest if everyone else did as well, now refrain from divesting.

Van Stijn describes a collective action problem. Collective action problems arise when cooperation between all actors would be beneficial for all, but high incentives exist for individuals to take a free ride and benefit from the constraints on the behaviour of others while not constraining their own behaviour (Robbins, Hintz, & Moore, 2014). The most famous example is Hardin's description (1968) of the Tragedy of the Commons, in which individuals fail to protect common resources, like clean air. The costs of protecting the clean air are borne by individuals, while the benefits are borne by all. Collective action is needed to protect common resources, but this often fails because there is a high incentive for individuals to keep polluting.

Almost all interviewees say that the problem of fossil fuels causing climate change can only be solved by the government. They hereby acknowledge that market players cannot efficiently distribute the pollution that fossil fuel companies cause. The theorem of economist Coase (1960), who argued that externalities like pollution can be most efficiently solved through contracts and bargaining between property owners, does not hold for this case. The assumptions on which Coase (1960) based his theorem are violated. First of all, Coase assumes exclusive property. Clean air is no exclusive property, but a collective good: no one owns the air. Second, Coase assumes the transaction costs of agreeing on a contract are cheap or free, while in reality the transaction costs for agreeing on a contract on such a complex issue as air pollution are very high. Third, fossil fuel companies are very powerful and rich companies that occupy oligopoly positions. Their bargaining position is too strong in comparison to the unorganized, countless users of clean air.

Interviewees say the government has to step in to fix this market failure. They see the carbon tax as the best solution, as it would stimulate polluters to reduce their carbon emissions and invest in green

technologies and carbon capture and storage. A carbon tax is a solution that works according to the market response model, in which price, supply and demand affect resource availability (Robbins, Hintz, & Moore, 2014).

However, the same interviewees indicate that the collective action problem will also arise if a state wants to introduce a carbon tax. If all states would collectively introduce a carbon tax, this would be beneficial to all because it would be a big step in solving the climate change problem. However, individual states have a high incentive to refrain from introducing a carbon tax: a substantial carbon tax will make their carbon-intensive products more expensive and less competitive on the global market. Since this incentive exists for all states, collective action is unlikely. Action by individual states is also unlikely, because it gives the companies in their country a big disadvantage on the global market in terms of competitiveness.

One representative of a financial institution⁹ describes how states are confronted with the collective action problem:

'Imagine that the governments introduces a high carbon tax or a prohibition. That will lead to an increase in the energy price, because there is no cheap alternative, and that will affect the complete national economy negatively. That is why governments are hesitant to act: the benefits are far away, the costs are now.'

This interviewee refers to the competitiveness of companies in the country. He says that a higher energy price will make the products produced in this country more expensive, since their production processes use energy, making the products non-competitive on the global market. The national firms thus bear the costs of the carbon tax, while other countries share the benefits of cleaner air.

Interviewees describe how the collective action problem makes it difficult to take action for both states and investors. They describe how divestment is seen as a cost that investors are only willing to make when all other investors do so as well, because they have a disadvantage otherwise. They describe how states only want to introduce a carbon tax if other states do so as well, because they suffer from a decline in competitiveness otherwise. Since a high incentive to take a free ride exists for all individuals, chances are small that actors will take collective action. Inaction is the result.

Many initiatives have been undertaken to collectively tackle the problem of climate change. There are the multilateral negotiations that led to the Kyoto protocol in 1997 and the Paris agreement in

⁹ This interviewee wishes to be cited anonymously.

2015, there is the European carbon cap-and-trade system EU ETS and there are many private initiatives like the Taskforce for Climate-related Financial Disclosures. None of the initiatives has been able to tackle the climate change problem effectively. The collective action problem is hard to escape.

Thinking of the climate change problem as a collective action problem is a constraint for action, because no one wants to make costs that give one a disadvantage while others benefit. If a new language would become dominant in which environmental action is seen as a business opportunity with a first-mover advantage or as an example that will inspire others, this might increase the motivation for states and firms to take action. The carbon bubble movement tries to replace the collective action problem narrative with a narrative in which fossil fuel divestment combined with green re-investment is a lucrative investment choice. In this new narrative environmental action is the attractive option and inaction is seen as a risk. However, the interviews make clear that financial sector employees still see fossil fuel divestment as a *cost* which they are unwilling to make because of the collective action problem. The carbon bubble movement has failed to replace this dominant narrative.

4.5.5 Radical flank effect

During the interviews some indications were found that another causal mechanism, which was not hypothesized in the theoretical framework, is present in this case as well. This mechanism can be linked to the theory of the radical flank effect, an effect that was first described by sociologist Herb Haines (1984, as cited in van Huijstee & Glasbergen, 2010, p. 611). Interviewees who work for 350.org and Carbon Tracker Initiative state that their organisations together cause the radical flank effect.

The theory of Haines describes how NGO strategies can amplify each other when one NGO chooses a confronting strategy while another NGO takes a cooperative stance. When there is demand for radical change in society on a certain issue expressed via protest actions, like demonstrations, naming-and-shaming or civil disobedience, this makes the targeted group more likely to discuss this issue with the moderate NGOs in the social movement.

In this case, 350.org has a confronting strategy. They have a strong media campaign in which they call fossil fuel companies 'the enemy of the people'. They are stigmatizing fossil fuel companies and they are asking public institutions to break ties with these companies. Carbon Tracker Initiative on the other hand represents the moderate voice. They are doing financial research on the risk of stranded assets and they are talking to financial institutions to convince them of this risk. They

believe that *'in terms of actually achieving any change in how these companies are operating, you need to talk to managers and have a seat at the table'* (Henrik Jeppesen, Carbon Tracker, interview 19-10-2018).

Asked about their interaction with Carbon Tracker Initiative one interviewee¹⁰ who works for the Dutch branch of 350.org Fossielvrij NL describes how Fossielvrij NL represents the more radical voice:

'We had an event this week where Mark Campanale [founder and executive director of Carbon Tracker Initiative] visited. [...] He said that they [Carbon Tracker] really need us and he encouraged us to demand radical change. He asked us to be not too moderate, because he thinks we really need demand for radical change as well.'

Henrik Jeppesen, of Carbon Tracker Initiative, describes the political signal that the divestment campaign gives. Divestment creates a threat for company managers: if they do not change anything in terms of sustainability, their financiers might walk away in the future.

'Divestment in itself is a very important political signal that has got managers of companies alert to the fact that there might be a day, there might come a time that shareholders become much more aggressive in their stewardship of companies and they might also not allow companies to raise new capital to fund an acquisition.'

Jeppesen also describes how the divestment strategy of 350.org and the engagement strategy that Carbon Tracker Initiative promotes amplify each other.

'I really hate it when people are saying it is engagement versus divestment. [...] I am doing whatever I can to tell people: "Listen, it is not versus, it is together." Because divestment by itself cannot really get us there and engagement takes a lot longer without this threat of divestment, unless you put pressure on people.'

Fleur Ydema calls it 'demand for radical change' and Jeppesen calls it 'a very important political signal' and 'public pressure'. The interviewees hereby refer to the public pressure that 350.org builds with their media campaign. Studies have found that the divestment campaign has been successful in the stigmatization of fossil fuel companies (Bergman, 2018; Ansar, Caldecott, & Tilbury, 2013). This puts some pressure on financial institutions that finance fossil fuel companies. Interviewees from the carbon bubble movement say that financial institutions are willing to talk to Carbon Tracker Initiative under this public pressure.

¹⁰ This interviewee wishes to be cited anonymously.

Due to limited time, financial sector employees were not asked questions about their perception of this interaction. It can thus not be verified if they are more willing to talk to Carbon Tracker because they feel the pressure of the divestment media campaign. As indicated in the previous paragraph, interviewees' perceptions of Carbon Tracker vary widely. The interviewees were therefore not asked to compare Carbon Tracker and 350.org.

The radical flank effect could be linked to network theory. Network theory argues that how actors are perceived influences whether their message is taken seriously. The radical flank effect is partially about financial institutions' perception of NGOs as moderate or radical and their tendency to talk to moderate NGOs. However, crucial in the radical flank effect is that financial institutions talk to moderate NGOs because of the public pressure built by radical NGOs. Radical NGOs are building this pressure via public opinion. This mechanism is not dealt with in network theory. Therefore, the radical flank effect should be considered separately from network theory.

Chapter 5

Conclusion

A stream of articles of renowned media outlets drew me to the subject of ‘the carbon bubble’. NGO Carbon Tracker Initiative, who has founded the term, celebrates on their website that they have cemented the term in the financial lexicon. The prestigious financial sector initiative TFCF has acknowledged stranded assets as a risk which financial institutions should take into account from now on. Bergman, a researcher of the University of Sussex, argues that the divestment campaign has made an impact on the financial sector. He argues there is a growing interest among investors in the risk of stranded assets.

The above mentioned developments made it initially seem plausible that the carbon bubble frame has made an impact on financial institutions. It seemed extraordinary: a materially powerless NGO had been able to influence powerful financial institutions to change their practices. To explore how this process had taken place, two reports and two webpages were analysed and nine semi-structured interviews were conducted: with four representatives of the financial sector, three representatives of the environmental movement and two persons who work at institutions that critically research the financial sector.

5.1 No real impact

The main question this research started with is: what explains the adoption of the carbon bubble narrative by the financial sector? The most important conclusion of this research is that the financial sector has not *really* adopted the carbon bubble narrative. Some changes can be observed in the financial sector, especially in the coal industry for which major banks have stopped providing loans. However, if financial institutions would take the carbon bubble risk seriously, they would have taken similar actions for the oil and gas sector. The interviews in this research make clear that financial institutions are not planning to take these measures in the near future.

Carbon Tracker Initiative and several Dutch media have emphasized the successes and the transformative power of the carbon bubble movement. This research makes clear that their success narrative needs nuance. Financial institutions speak with high urgency about stopping climate change in their public statements and their massive support of the TCFD recommendations would suggest that they take the risks of stranded assets seriously. However, the interviews in this research make clear that they do not. There are three reasons why investors are not divesting from the oil and gas industry. Firstly, the immediate threat of state regulation on which the carbon bubble frame is based

is not felt by financial institutions. Secondly, the institutional logics that dominate the financial sector, such as short termism, make financial institutions less sensitive to long-term risks, such as the risk of stranded assets. Thirdly, financial institution employees state that several constraints make divesting from fossil fuels and investing in green energy difficult.

This is not to say that the carbon bubble narrative has not made an impact at all. All interviewed financial sector employees are familiar with the term 'carbon bubble' and 'stranded assets' and they indicate their colleagues are as well. Many are sceptical to the carbon bubble narrative and they emphasize that it assumes that governments will install Paris-compliant policies, an assumption they sincerely doubt. Others indicate that the stranded assets are certainly a subject of conversations on risks, even if it is not considered the most pressing issue. The carbon bubble narrative has thus caused a minor shift in language. Since the narrative is relatively new, its small impact should not be underestimated in terms of significance. Besides that, investors are actually divesting their money from the coal industry which is an important development.

5.2 Theoretical explanations

To answer the main question – what explains the adoption of the carbon bubble narrative by the financial sector? –three theoretical explanations are used that are derived from existing theories: the theory of competing ideas, legitimacy theory and network theory. The methodology of process tracing is used to test the causal mechanisms described by the theories. Each causal mechanism describes how the carbon bubble narrative was adopted by financial institutions. Then, interviews and document analysis were used to find evidence that supports these three causal mechanisms. Strong evidence has been found to confirm that the causal mechanism described by the theory of competing ideas is present in this case. For legitimacy theory, there has been found some indications but no conclusive evidence. Unfortunately, network theory has not been tested substantially due to limited time. The interviews suggest that another causal mechanism, that was not hypothesized in the theoretical chapter, is present in this case as well. This mechanism can be linked to the theory of the radical flank effect. Another additional finding of this study is that financial sector employees still consider it difficult to take climate action because of collective action problems, which demonstrates that the carbon bubble movement has not been able to replace this dominant discourse.

The theory of competing ideas argues that existing ideas and norms of financial institutions explain why these institutions have adopted the carbon bubble narrative. During this research I came to realize that the carbon bubble movement has had difficulty convincing financial institutions of the carbon bubble risk. This research has found strong evidence that the theoretical concept of a

contested space of ideas (Finnemore and Sikkink, 1996) can explain this difficulty. Finnemore and Sikkink (1996) describe how new frames enter a normative space in which the existing norms and ideas dismiss its credibility. This applies to the stranded assets frame as well. The dominant norm in the financial sector is the goal of maximizing returns. Since fossil fuel assets provide high and stable returns, they are perceived as a world class investment. Short termism, a logic of appropriateness, favours this dominant norm and cause financial institutions to be less sensitive for the long-term risk of stranded assets.

The second explanation tested in this research comes from legitimacy theory, since reputation concerns might be able to explain why financial institutions have adopted the carbon bubble narrative in their public statements. Legitimacy theorists (Ashforth and Gibbs, 1990) argue that organizations often use symbolic management in order to maintain or repair their reputation. Symbolic management means that organizations communicate changes while actual change is lacking. Although no strong evidence has been found to confirm the mechanism of legitimacy theory, yet some indications are found that this mechanism is present in this case. There is indeed a gap between the language of financial institutions in public statements on carbon disclosure and divestment on the one hand and the changes in their behaviour and actual beliefs, as expressed by interviewees, on the other hand. Six interviewees state that reputation is important to financial institutions, one of them explicitly stating that institutions write these statements for reputation concerns while actual change is lacking. Although this is not conclusive evidence, yet these are indications that the mechanism of legitimacy theory is present in this case.

The third theory tested in this research is network theory, since social relations of financial institutions are expected to be important in explaining financial institutions' adoption of the carbon bubble narrative. Unfortunately this explanations has not been tested substantially in this research. The interviews made clear that researching networks is complicated and that it takes many questions to identify how networks work. Because this research aims to test other theoretical explanations as well, there was not have enough time to properly investigate network relations during the interviews. The few received answers were mixed, contradicting and sometimes vague. I therefore decided to focus on the other two explanations. Therefore, the hypothesis that network relations play an important role in this case cannot be confirmed nor rejected.

The interviews have also yielded results that were not expected when formulating theoretical explanations. Many interviewees still consider it difficult to take climate action, and divest from fossil fuels, because of collective action problems. Divestment from fossil fuels is perceived as a cost they are unwilling to make, because everyone will benefit from it, while they alone bear the costs.

Thinking in this way about the climate change problem is a constraint for action, because no individual is willing to bear costs alone while others benefit.

The carbon bubble movement has tried to replace this discourse with a new narrative in which fossil fuel divestment is not seen as an individual cost, but as a lucrative investment choice. In this new narrative environmental action is the attractive option and inaction is a risk. However, the interviews make clear that the carbon bubble movement has not been able to replace the dominant collective action problem discourse.

Interviewing people from both the divestment movement and Carbon Tracker Initiative has given me interesting insight in their relationship. Although no conclusive evidence was found, indications have been found that their divergent strategies cause a radical flank effect (Haines, 1984, as cited in van Huijstee & Glasbergen, 2010, p. 611): the radical position of the divestment movement causes financial institutions to be more eager to talk to the moderate Carbon Tracker Initiative.

5.3 Lessons for NGOs, media and the government

This research offers some lessons for societal actors as well. First of all, it seems that Dutch media are unrightfully pushing the success story of the divestment campaign. They are not critically reflecting on the assumption that the carbon bubble movement makes, namely that the world's governments will install Paris-compliant policies for certain. They present the carbon bubble frame as the only truth instead of presenting it as a social movement narrative. They attribute enormous transformative power to the carbon bubble campaign, but fail to mention continued investments in the oil and gas sector. I recommend Dutch media to strive for more objectivity when reporting about the carbon bubble and the divestment campaign.

Secondly, this research offers some lessons for NGOs who consider to target financial institutions in their campaign. NGOs should consider the institutional logics of these institutions, like short termism, the main goal of maximizing returns and their tendency to take risks, since they could pose a constraint to their co-operation. Still, the fact that these institutions are commercial organizations also poses an opportunity, since commercial organizations rely on public opinion to maintain their reputation. NGOs can use media campaigns to build public pressure and in this way they might be able to influence financial institutions. Another important lesson from this research is that discursive change takes a long time. It has taken eight years for the carbon bubble movement to achieve a minor shift in language in the financial sector. Considering the urgency of climate action, climate NGOs should consider more effective, faster strategies to achieve their goals.

Thirdly, this research demonstrates that the lack of clear climate policies by governments causes economic uncertainty which in turn leads to inaction by financial institutions. Interviewees indicate that it remains risky to invest in green energy, because the government has not formulated a clear vision on which green energy technology will be most important in the future. I therefore recommend the Dutch government to take strong leadership in the transition towards a low-carbon economy, arguing that this will lead to an increase in green investments.

5.4 Shortcomings and future research

This research has certain shortcomings, of which some could be dealt with in future research. First of all, network theory has not been substantially tested in this research due to limited time. Because interviewees did not bring up network relations as explanation, this theory received less attention. The few questions that were asked about network relations during the interviews did not lead to sufficient, consistent information on which conclusions on network theory can be drawn. Still, network theory could be an interesting explanation to understand why frames become dominant. Future research could dedicate a complete case study to investigate all the aspects of network theory in this case: relations between financial institutions and the carbon bubble movement; financial institutions' perception of several actors from the movement; and the relations between financial institutions and fossil fuel companies.

Secondly, due to the limited time available for a master thesis only nine interviews were conducted. This negatively affects the reliability of this research.

Thirdly, as a political scientist student I sometimes lacked economic knowledge during the interviews. The financial sector is governed by economic laws that I am not familiar with. Interviewees sometimes spoke about things that I had no knowledge of, which made it difficult to critically assess their claims. This research could therefore be largely improved if an economist and a political scientist worked together.

Fourthly, establishing which part of social change can be contributed to a certain social movement is challenging. The same applies to this case study. We can observe that financial institutions have stopped lending money to the coal industry, but we cannot attribute this change fully to the divestment campaign. Economic rationales, the Paris agreement and a wider call for green energy in society might have played a role as well. Establishing the impact of the divestment campaign is therefore difficult.

Fifthly, since some of these developments have only taken place recently, their effectivity is hard to establish. For example, the TCFD and other sustainable finance platforms have only published their first reports in the year this research was conducted, in 2018. Currently, these platforms do not set

targets, but some interviewees see them as a first step, arguing that targets will soon be added. Because of their recent founding, we cannot state with certainty if these initiatives are a first step towards target setting or a paper tiger that only distracts from real action. It would be interesting to conduct the same research in ten years to compare what these platforms now promise and which action has actually taken place by then. This could either confirm or reject this research' initial conclusion that these platforms are paper tigers.

5.5 Academic relevance

This research contributes to the academic debate in several ways. Firstly, this research has looked at the process in which actors adopt new frames. Several explanations were tested to understand why the carbon bubble frame was adopted by the financial sector. During this research I came to realize that the frame was not really adopted by the financial sector. Still, some conclusions can be drawn about the theoretical explanations used in this case study. First of all, strong evidence has been found to confirm that the theory of competing ideas is important in explaining why frames are not adopted. Second, although no strong evidence was found, some indications were found that legitimacy theory is an important explanation as well. Network theory has not been substantially tested in this research due to limited time. Still, these are valid explanations for the process in which frames are adopted, as was convincingly argued in the theoretical framework. Future research should investigate whether the causal mechanisms described in these theories can be identified in empirical cases.

Secondly, this research makes clear that financial institutions are different than businesses and should be considered as such by researchers who study the interaction between NGOs and other private actors. Financial institutions have some particular characteristics, namely their short term focus and their tendency to take risks, which causes them to be less sensitive for long-term issues raised by NGOs. However, financial institutions can be powerful agents of change once they are convinced of its necessity. The decision of a few influential European banks to stop financing coal companies means the end of the coal sector in Europe is near, according to interviewees. Future research should further investigate the interaction between NGOs and financial institutions as agents of social change.

An important lesson that can be drawn from this research concerns cases in which both framing by social movements as well as reputational management by the targeted organizations are taking place. These cases can be hard to grasp. How do we know when effective framing has taken place and interests of the targeted group have changed accordingly; or when the targeted party has only

adopted the frame publicly to respond to public pressure and secure their reputation? Some researchers might refrain from studying these cases, as they believe it is unfeasible to establish whether organizations sincerely adopt new opinions or merely pretend to do so. In this research, there was also a concern that the respondents might repeat the public statements of their organizations. During the interviews, it became clear that this concern was unnecessary. Although a risk of strategic construction always exists, the interviewees were well able and willing to explain the real priority that is given to climate change in their organizations, independent from the organization's public statements. Comparing organizations' public documents and the interview statements of their employees teaches us a lot about the difference between public statements and internal stories of organizations, and may thus shine some light on the interaction between framing and reputational management.

This research also offers an important lesson for researchers who are interested in studying network relations. This research made clear that network analysis is complicated and time-consuming. Studying networks takes a complete study project, since it is a different level of analysis than studying the content of what is being conveyed. If a research' focus is on the content of messages, like in this research, it is not recommendable to do network analysis as a smaller project next to content analysis. If there is not sufficient time to do a thorough network analysis, the chances of generating some useful findings are small. I therefore would recommend network researchers to take network theory as a main perspective and use several sources, like documents and interviews, to base their network analysis on.

This thesis demonstrates that the impact of the carbon bubble campaign should not be overstated, as is currently done by media, financial institutions and the movement itself. For now, its impact on the financial sector is small. Radical change, either in the form of strong government regulation or reform of the financial sector, is needed to ensure that financial institutions take their responsibility in stopping climate change.

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