Investor protection for crypto assets

An analysis of regulatory strategies applied to this contemporary issue

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Abstract

This thesis explores the value of literature on regulatory strategies in describing and explaining strategies found in investor protection regulation for crypto assets. Through document analysis, it provides an overview of regulatory strategies for this contemporary issue and their potential explanations. The documents come from relevant regulators in the US, EU, UK and Australia and were published between May 1st 2020 and May 1st 2022. An abductive approach was used to be able to highlight surprising findings. The strategies found in the documents were largely in line with descriptions in the literature, with *command and control* and *information and education* being the dominant strategies. A *no intervention* strategy was found frequently as well, although this seems to be partially due to the fact that some regulators are still in the process of preparing regulatory frameworks for crypto assets. When it comes to explaining the strategies, economic and institutional factors play an important role. In addition, and underrepresented by the literature, specific characteristics of the regulatory issue itself were an important explanation for regulatory strategies. Finally, two fields of tension are outlined that describe *how* these factors can explain the choice for certain regulatory strategies.

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List of abbreviations

Organization	Abbreviation
Australian Competition and Consumer Commission	ACCC
Australian Securities and Investments Commission	ASIC
Bank of England	BoE
Commodity Futures Trading Commission	CFTC
European Commission	EC
European Securities and Markets Authority	ESMA
Financial Conduct Authority	FCA
Her Majesty's Treasury	HM Treasury
Securities and Exchange Commission	SEC

1. Introduction and research question

Introduction

Speculation on crypto assets by consumers or retail investors has skyrocketed in recent years (Australian Securities & Investments Commission [ASIC], 2022). This development has gained attention from researchers and regulators alike. Both groups often focus on a number of risks related to crypto assets, including the stability of the financial system and the use of crypto currencies by criminals or terrorists (Yeoh, 2017). There is, however, another risk to crypto assets: investors or consumers can lose substantial amounts of money due to misleading information, volatile crypto markets and the absence of underlying assets. For conventional investments, such as shares of publicly traded companies, regulation provides some degree of investor protection (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000; Goldstein & Yang, 2017). Crypto assets, however, are often decentralized by nature (Cumming, Johan, & Pant, 2019). Centralized regulation could be at odds with the core value proposition of these assets. In addition, it may lead to practical issues, as the decentralization means that there are generally no entities that can comply with regulation or be sanctioned by authorities. Nonetheless, crypto assets and related products are often presented as securities and treated as such by both investors and regulators (Cumming et al., 2019). These two characteristics, decentralization and financial risks for investors, represent an important dilemma for regulators. With that tension in mind, this thesis took a closer look at investor protection regulation for crypto assets. More specifically, this research describes and attempts to explain regulatory strategies in investor protection regulation for crypto assets.

Knowledge gap

Investor protection regulation for crypto assets exists, at least to some extent. In the United States (US), for example, crypto asset related activities are regulated by financial market regulators (Hughes, 2017). Furthermore, the offering of new crypto currencies to investors is regulated for the purpose of investor protection (Cumming et al., 2019). In the European Union (EU) regulators are preparing new legislation for crypto assets. Investor protection is being mentioned as one of the aims of this legislation (Ferrari, 2020). In spite of the regulatory activity, not much literature on the topic of investor protection regulation for crypto assets exists as of yet. The literature that does exist, primarily concerns the US context (Hughes, 2017; Cumming et al., 2019). Hence it remains largely unclear how different regulators around the world respond to the contemporary phenomenon of large scale crypto speculation by consumers or retail investors.

Regulators can employ a number of different regulatory strategies to deal with a phenomenon. Unlike investor protection for crypto assets, regulatory strategies are outlined in an extensive body of academic literature. Regulatory strategies are often divided into traditional command and control regulation and a number of alternative strategies (Baldwin, Cave, & Lodge, 2011; Gunningham & Sinclair, 2017; Heims & Lodge, 2018). Whereas command and control regulation is government centered and generally comes with strong enforcement measures,

alternative strategies can employ a wide variety of different instruments (Balwin et al., 2011). Examples include incentives, educational instruments and self-regulation (Baldwin, 2005; Baron, Contreras, Husovec, Larouche, & Thumm, 2019). Strategies are often combined in dealing with a single issue or phenomenon (Baldwin et al., 2011; Braithwaite, 2017). A particular type of combination updates strategy based on the motives or perceived motives of the regulated party. Regulation or enforcement begins with soft instruments, in an attempt to persuade actors to comply with the preferred behavior. If compliance does not occur, regulators gradually escalate towards tougher instruments. This strategy is known as responsive regulation (Ayres & Braithwaite, 1992; Braithwaite, 2017). Although the knowledge regarding regulatory strategies is plentiful, it is not clear how the different strategies relate to investor protection for crypto assets.

A number of regulatory strategies are found in investor protection regulation for traditional assets. For instance, information disclosure is often used to address the information asymmetry between managers and their investors (Goldstein & Yang, 2017). Ensuring investors are well-informed is meant to better protect them against investing decisions that could result in unnecessary losses (Goldstein & Yang, 2017). In addition, command and control regulation such as prohibitions of the offering or marketing of certain products, deemed too risky or complex, can be found in investor protection (Kingsford-Smith & Dixon, 2015). All of this, however, concerns investor protection for traditional assets. It remains unknown if the characteristics of crypto assets change things.

The lack of a legal entity behind decentralized crypto assets and the absence of one specific geographical location are among the characteristics that provide regulators with challenges (Hughes, 2017). Who can be forced to disclose information or self-regulate, if the person or organization behind a crypto asset is unknown? It is a mystery who created the famous Bitcoin, for example (Kim, Sarin, & Virdi, 2018). Responsive regulation requires some form of dialogue between the regulated party and regulator (Braithwaite, 2017). How can regulators respond to the level of compliance from a blockchain network consisting of code? Although some initial insights can be found in the literature, ambiguity prevails.

Given the recency of the phenomenon and limited available literature on the topic of investor protection for crypto assets, it is currently unclear what factors explain the regulatory strategies that are applied to it. In general, factors that are known to explain regulation include economic, power of ideas and institutional factors (Baldwin et al., 2011). In addition to these factors, there could be other, more context specific explanations.

The knowledge gap concerns how the substantial theoretical knowledge on regulatory strategies, investor protection regulation and factors that explain regulation relates to the specific context of crypto assets. The application is made especially complex by the decentralized characteristics of many crypto assets. The knowledge gap is even larger for investor protection regulation for crypto assets outside of a US context, given the lack of literature.

Research aim

The research aim of this thesis is twofold. The first aim is to describe regulatory strategies found in investor protection regulation for crypto assets. The contemporary nature of the phenomenon of crypto speculation and the lack of existing research on how regulatory strategies apply to the unique decentralized nature of crypto assets require descriptive work before any further research can be done on the topic.

The second aim is to explain these strategies. This will be done by comparing the explanations, or potential indicators thereof, found in the document analysis with the literature on regulatory strategies. The purpose is to increase the understanding of how well the general, theoretical insights match the reality of specific complex regulatory issues. Initial insights into which factors explain the observed strategies could demonstrate to what extent the theory holds up when confronted with new technologies and unique characteristics.

Even though it is difficult, if not impossible, to pinpoint exactly which factors explain regulatory strategies found in investor protection regulation for crypto assets, this research aims to deliver some initial insights or well informed hypotheses.

Therefore, the aim of this research is to describe and explain regulatory strategies in investor protection regulation for crypto assets.

Research question

The line of questioning that follows from the knowledge gap and research aims is outlined below.

Research question:
What regulatory strategies can be recognized in investor protection regulation for crypto assets and how can we explain them?

Sub-questions:
1. *What regulatory strategies can be recognized in investor protection regulation for crypto assets?*
2. *How can we explain these regulatory strategies?*

Societal relevance

Designing investor protection regulation for crypto assets is a complex and challenging task (Hughes, 2017). Regulators are struggling to regulate crypto assets, in particular due to the unique, decentralized characteristics of many crypto assets (Hughes, 2017). Documenting which strategies are applied in different markets around the world can provide regulators with relevant insights into how their international counterparts deal with the issue. Insights into

current attempts to provide protection regulation may inspire regulators. Previous research underscores the difficulty of the challenge that regulators face over the next couple of years, as well as the need for further research on the topic (Hughes, 2017). Given the importance of effective investor protection for the overall size of the economy and the level of equality in the distribution of assets, there is a lot at stake here (Shleifer & Wolfenzon, 2002).

Besides regulators, insights into investor protection regulation are relevant for other stakeholders as well. First of all, investors who participate in crypto asset speculation may enjoy clarity regarding the extent to which they are protected. Furthermore, firms which offer crypto assets to the public can use the findings to better assess their regulatory obligations and the underlying strategies (which may impact enforcement measures, for example). Arguably, participants in the economy as a whole can be seen as a stakeholder in crypto asset regulation as well, according to a financial journalist who was contacted in the context of this thesis (P. Brasser, personal communication, May 27, 2022). Ultimately, unregulated speculation can harm the economy as a whole, as became obvious in the 2008 financial crisis. Recently, the markets in crypto assets have come under a lot of pressure. At the time of writing this thesis, the total combined value of crypto assets is less than a third of its all time high (Oliver, 2022).

Scientific relevance

The efficaciousness of the different regulatory strategies outlined in the academic literature depends strongly on the context. Previous work on regulatory strategy suggests that much can be learned from the application of different strategies (Haines, 1997). Research on the application of different strategies to the context of investor protection regulation for crypto assets could therefore add to the theoretical understanding of regulating in cases of technological innovation or in the absence of entities to regulate.

Moreover, the results may provide valuable insights into the role that characteristics of a regulatory issue itself play in explaining regulatory strategy. Literature on regulatory strategies outlines a number of factors that explain regulation, including economic, power of ideas and institutional factors (Baldwin et al., 2011). These factors can be valuable in explaining regulation for a wide range of different issues, yet they may not tell the full story. This research is open to alternative explanations as well, including those related to the characteristics of crypto assets and their underlying blockchain technology. Initial findings regarding the explanatory power of factors derived from the literature versus alternatives can clarify how relevant they both are in a specific, complex context.

In summary, the scientific relevance lies in demonstrating to what degree the literature on regulatory strategies applies to the contemporary phenomenon of crypto asset speculation. Findings may provide nuances to the application of the theory to new contexts.

2. Theoretical framework

In this chapter, the relevant concepts and theory are outlined. The chapter begins with public administration theory on regulatory strategies and proceeds to gradually zoom in on the specific topic of consumer protection regulation for crypto assets. Towards the end of chapter, the knowledge gap and several expectations are discussed.

Regulatory strategies

One key concept in this thesis is **regulatory strategies**. After all, an overview of strategies and their characteristics is required in order to identify these strategies in crypto asset regulation. While the phenomenon at hand is relatively new, regulatory strategies are more established in academic literature. Different regulatory strategies can be categorized into traditional and alternative regulation.

Traditional regulation or command regulation consists of state regulation (Baldwin, 2005; May, 2007). Another name for this type of regulation is **command and control**. Its characteristics include a government centered approach and clear rules backed by sanctions, as well as serious enforcement by the government (Baldwin et al., 2011). Forceful actions, such as prohibitions and penalties, are usually part of a command and control strategy. Another instrument of this strategy is standard setting. For instance, regulators can set standards for the maximum amount of pollution for a specific industry (Baldwin et al., 2011). Setting the right standards and then effectively enforcing them requires vast amounts of information and resources, which is why regulators sometimes prefer alternative strategies (Sinclair, 1997). A study on command and control regulation for businesses in China, related to sustainability and the environment, emphasized a pitfall of the strategy. The regulation does not take into account the differences between businesses, as it does not leave businesses free to decide how to reach a certain target (Tang, Qiu, & Zhou, 2020). This led to the regulatory strategy hurting business performance.

Alternative regulation became popular in the second half of the 20th century and often entailed some form of collaboration, rather than regulation as a one way street from government to regulated parties (Heims & Lodge, 2018). As a result, outcomes of alternative strategies are more likely to reflect a consensus of stakeholders. However, such a consensus is often not the same as the most effective option (Heims & Lodge, 2018).
Alternatives to traditional regulation contain a wide variety of regulatory strategies. The five alternative strategies generally outlined in the literature are: no intervention, incentive-based systems, information and education, self-regulation and co-regulation and market-harnessing controls (Baldwin, 2005; Baldwin et al., 2011; Gunningham & Sinclair, 2017). Unfortunately, there are inconsistencies in the literature. The strategy of market-harnessing controls, for example, is not mentioned by Baldwin (2005).

A **no intervention** strategy is largely self-explanatory. Unsurprisingly, literature on regulation generally does not explore this strategy in detail, since it entails a lack of regulation (Baldwin,

2005). A lack of intervention can be used by governments to persuade actors to participate in certain markets or economic behavior. For example, the United Kingdom (UK) deregulated the housing market in the late 1980's with the aim of increasing the number of private landlords who offered housing on the rental market (Nield & Laurie, 2019).

Another strategy that is relatively low on intervention is **incentive-based** regulation. Incentive-based strategies often provide a budget-friendly option for regulators to get actors to behave in line with public interest. Critics argue that such a system reduces sanctions that should come with moral judgment, to a rationalized business cost (Baldwin et al., 2011). Such incentives are often of a financial nature, negative and positive taxation for example. Incentives leave much of the decision making up to the regulated, instead of the regulator (Baldwin et al., 2011). This type of strategy is considered softer than traditional command regulation. It is also considered to be less predictable, as regulated actors are still free to choose their own behavior and go against incentives (Baldwin, 2005).

Information and education strategies consist of a variety of different regulatory instruments. Ways of structuring the disclosure of information, as well as 'naming and shaming', are often meant to inform consumers (Baldwin et al., 2011). Information disclosure is a major element in financial market regulation and aims to inform investors and improve the overall quality of the market (Goldstein & Yang, 2017). Besides information disclosure, education is another instrument of this strategy. Education can be interpreted in two different ways: education for the regulated actor, to make sure they know the relevant rules and requirements as an enforcement tactic, and educating consumers or citizens. An example of educating consumers is a government campaign warning about the risks of borrowing money. Information disclosure can also serve other purposes than education. Naming and shaming or regulatory shaming entails the disclosure of information about actors who participate in unwanted (business) practices. Unlike incentive-based strategies, shaming is morally charged (Yadin, 2019). Nonetheless, it is less expensive than traditional regulatory strategies.

Self- and co-regulation strategies aim to benefit from the knowledge and experience of actors within the regulated domain (Braithwaite, 1982). Their expertise should, in theory, result in a better match between regulation and practice. Self-regulation may therefore increase effectiveness (Streeck & Schmitter, 1985). In addition, these strategies reduce the enforcement burden and related costs (Baldwin et al., 2011). Benefits of self-regulation thus include the limited state resources it requires, compared to other strategies, and the use of expertise that exists outside of government agencies (Baron et al., 2019). The latter is a reason why self-regulation is often applied to fields where in-depth technical knowledge is called for (Baron et al., 2019). As a result, although government standards are a characteristic of command and control regulations, standards may also be found in a strategy of self-regulation.

Actors are not always willing to regulate themselves. Hence, arguably the most realistic form of self-regulation is enforced self-regulation (Braithwaite, 1982). Obligatory reporting to authorities and harsh criminal sanctions in the case of negligence are meant to ensure that self-regulation is done properly. Closely related to self-regulation is the strategy of co-regulation, where

regulators work together with industry representatives in order to formulate regulation that is supported by the industry (May, 2007).

The fifth alternative strategy is **market-harnessing controls**. This strategy includes attempts to keep markets competitive by preventing monopolies (Randle & Hoye, 2016). Another example of the strategy is the use of market mechanisms in tradable permits, such as CO2 pollution permits (Baldwin et al., 2011). Such permits can also be considered part of an incentive-based strategy (Hahn & Stavins, 1991). The distinction between these two strategies can thus be somewhat ambiguous. Perhaps this is why Baldwin (2005) excludes market-harnessing controls. In addition, market-harnessing controls are characterized by public-private cooperation. Such cooperation may be considered in cases where government authorities lack the required resources for a given task (Randle & Hoye, 2016). The strategy often consists of steering market developments, for example through competition law, rather than extensive state regulation. Hence, the level of government intrusion is typically limited, as with all alternative strategies (Baldwin et al., 2011).

This brings the total amount of regulatory strategies derived from literature to six: traditional command regulation and five alternative strategies. This is demonstrated by the figure below.

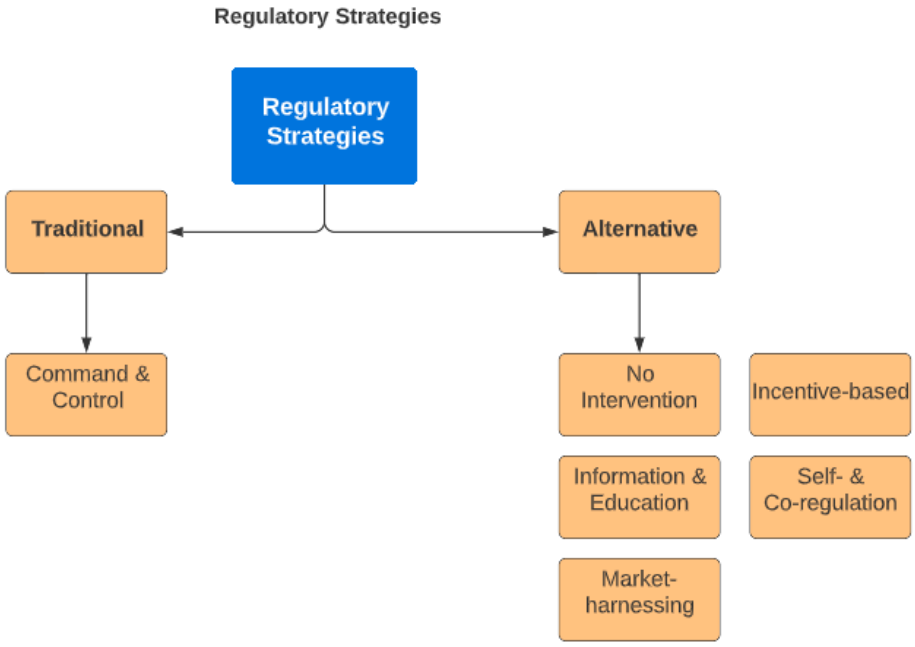

Figure 1. Regulatory Strategies

Often, distinguishing between the different strategies is somewhat artificial. While categorizing regulation into these different, single strategies can be useful for describing and explaining choices made by regulators, it also risks simplifying the complex realities of regulated domains. In practice, strategies are often combined (Baldwin et al., 2011; Braithwaite, 2017). Alternative

strategies are seldomly a complete replacement of traditional regulation (Sinclair, 1997; May, 2007).

Where a combination of different strategies is purposefully designed, this may constitute a strategy in and of itself. A well-known example can be found in **responsive regulation**. The concept stems from the notion that not every actor in violation of regulation has the same motives. Hence, responses by regulators should take the differences in motives into consideration. (Ayres & Braithwaite, 1992; Braithwaite, 2017). Regulation itself affects the regulated industry and the motives of actors within it as well. Responsive regulation takes such effects of regulatory content on motives of industry actors into consideration (Ayres & Braithwaite, 1992). The strategy relates to self-regulation, insofar that it suggests a less degree of government intervention for industries that manage to self-regulate effectively. Conversely, where self-regulation falls short, more traditional regulation may be required (Ayres & Braithwaite, 1992). A particular application of responsive regulation can be found in enforcement: how should authorities respond to violations of rules? Through an **enforcement pyramid**, regulators can assess the motives of violators and pick a matching response. Some will be rational actors who ignore the rules on purpose, while others may not even know they are in violation. For the first category sanctions can be a logical response, while the category likely requires a different kind of persuasion (Braithwaite, 2017). Rather than one single type of (enforcement) regulation, responsive regulation consists of gradual escalation from persuasive to punitive measures, giving the regulated actors multiple chances to learn and correct their behavior (Braithwaite, 2017). In reality, applying an enforcement pyramid requires the regulator or authority to have sufficient different regulatory instruments at its disposal to actually be able to gradually escalate up the pyramid (Gunningham & Sinclair, 2017).

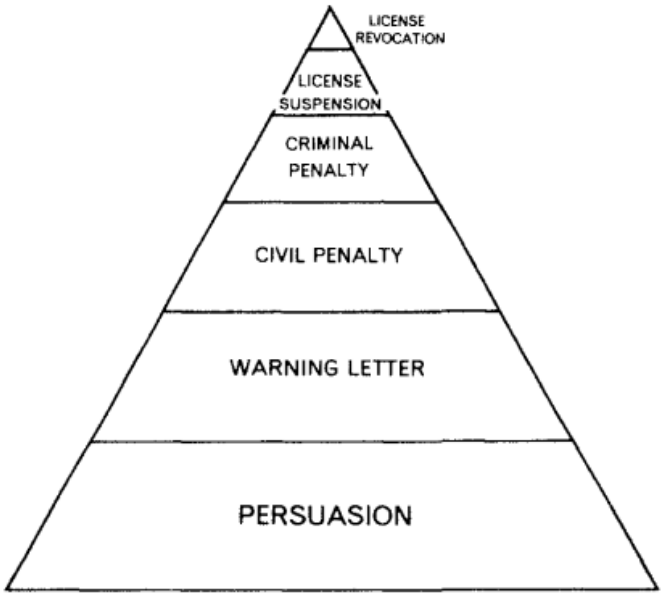

Figure 2. Example of an enforcement pyramid (Ayres & Braithwaite, 1992, p.35)

Explaining strategies

After the regulatory strategies found in protection regulation for crypto assets are described, this thesis aims to explain what factors led regulators to apply these strategies. Several categories of explanations can be found in the literature, including economic, power of ideas and institutional explanations (Baldwin et al., 2011). Public interest is also mentioned in the literature as an explanation for regulation, yet this concept is rather vague, subjective and difficult to differentiate from other factors (Baldwin et al., 2011). Therefore, public interest is not incorporated in this chapter.

Economic factors can play a role in the adoption of a regulatory strategy for a given phenomenon. Alternatives to command and control regulation are often supported by economic arguments (Sinclair, 1997). There are two main reasons that economic factors can help explain alternative regulatory strategies. Compared to alternative strategies, traditional regulation requires a lot of government resources and is therefore generally considered inefficient (Sinclair, 1997). The lack of sufficient resources or wish to allocate resources efficiently may thus lead to alternative regulatory strategies. Moreover, the degree of freedom for private actors in a regulated industry is higher without the interference that typically comes with command and control regulation. Command and control comes with relatively little flexibility for regulated actors (Hahn & Stavins, 1991). As a result, managers are not always able to run their operations in an economically optimal manner and may be prevented from innovating (Sinclair, 1997).

An illustration can be found in financial incentives to reduce emission. These should result in those firms with the lowest economic costs of reducing emission to pursue a reduction. Meanwhile, firms that have a less viable path to emission reduction may not respond to the incentive. This results in a more economically efficient outcome than forcing both types of firms to meet the exact same standard, which would be typical of a command and control strategy (Hahn & Stavins, 1991; Wiener, 2004). Alternative strategies leave more room for innovation than other strategies, which in turn should lead to faster economic growth. Hence, such regulation is especially suitable for industries with strong technological innovation (Wiener, 2004). Arguably, this is the case in the crypto industry.

In contrast, economic arguments can also be made in favor of traditional regulation. Such regulation may tackle the market failures that would occur without regulation (Llewellyn, 1999). Market failure then constitutes an economic argument in favor of regulation, clear guidelines and, potentially, sanctions. Moreover, strong regulation may prevent economic disaster. Tougher regulation of the banking sector might have avoided the 2008 financial crisis, for example (Tarullo, 2019). On the other hand, such regulation tends to come with costs and thus slow down, at least to some extent, economic growth. If risks can be addressed by less intrusive regulatory strategies, which distort the market less, this reduces welfare loss of the regulation (Tarullo, 2019). Most economic factors point in the direction of alternative regulation. Sometimes, economic factors even lead governments to deregulate, for instance to lower barriers of entry into a given industry and increase competition (Peltzman, Levine, & Noll, 1989).

All in all, economic factors can play a role both in explaining tough regulation, which would match a command and control strategy, and in explaining soft regulation, such as market-harnessing controls or even no regulation (Tarullo, 2019).

Besides protecting or boosting the general economic interests, regulators can also be motivated by the specific economic interests of actors in the regulated industry. This phenomenon is known as regulatory capture (Viscusi, Harrington Jr, & Sappington, 2018).[1]

In addition to economic factors, the **power of ideas** can explain a preference for certain regulatory strategies as well. This category includes culture, politics and ideology (Baldwin et al., 2011). For instance, ideological beliefs surrounding small government and fiscal conservatism have contributed to the popularity of self-regulation (Sinclair, 1997). Ideological factors can sometimes appear similar to economic factors. For example, the idea that mild regulation is good for financial markets is ideologically charged (Kwak, 2014). This has been linked to the wave of deregulation by the Reagan and Thatcher administrations (Baldwin et al., 2011). Reference to economic arguments for light regulation could thus constitute ideological arguments as well. This flawed categorisation in the literature may make it difficult to point out precisely which factor best explains regulatory strategy.

Cultural factors such as the long term versus short term orientation are known to have some explanatory power for regulatory preferences as well. A short term orientation generally leads to higher perception of risk than a long term orientation (Douglas & Wildavsky, 1983). It stands to reason that those who perceive more risk may feel more of an urge to regulate such risk. Hence, a preference for traditional strategies consisting of more extensive regulation may be explained by short term orientation. Cultural dimensions such as long term versus short term orientation are measured on a country by country basis by Hofstede (Hofstede, 2011). Another example of the relationship between culture and regulation can be found in the effectiveness of naming and shaming, a potential application of the information and education strategy, in different cultural settings. Where a population scores high on the cultural dimensions of individualism and equality, naming and shaming less effective. Where a population scores low on these dimensions, the strategy is more effective (Yadin, 2019; Kahan, 2006). Individualism and power distance, which is closely related to equality, are measured by Hofstede as well (Hofstede, 2011). Finally, the level of uncertainty avoidance in a country or market may explain the level and type of regulation. A high score on the dimension of uncertainty avoidance tends to result in a large number of strict laws, rules and regulations (Hofstede, 2011). This, in turn, can be linked to the characteristics of the traditional command and control strategy (Baldwin et al., 2011). Regarding investor protection regulation for crypto assets, a society that scores high on uncertainty avoidance may therefore prefer more extensive regulation in order to limit potential risks of losses.

Additionally, political factors fall under the umbrella of the power of ideas and are known to play a role in adopting regulatory strategies. In the financial sector specifically, deregulation has been linked to political favors for influential financial institutions who contribute to politicians'

[1] For a more detailed explanations of regulatory capture, one may consult Viscusi et al. (2018)

campaign budgets (Kwak, 2014). Such political motivations are therefore a potential explanation for deregulation or no regulation. The distinction between economic and political factors can be blurry: politics is generally seen as a power of ideas factor (Baldwin et al., 2011), but where the commercial interests of businesses are involved there may be an economic element to it (Viscusi et al., 2018).

The third category of explanations for regulation is **institutional factors**. Historical and institutional context may result in path dependency, which can potentially explain regulatory strategies (Schimmelfennig, 2016). For instance, if crypto asset regulation is designed by the same institutions that have a history of a certain type of financial market regulation, they may be more likely to adopt the same type of regulation for crypto assets. Furthermore, legal frameworks and pre-existing rules can shape regulation (Baldwin et al., 2011). The legal definitions that are put in place and limits to authority or jurisdiction may result in significantly different regulation than a blank canvas with limitless room for economic and political arguments to propose certain strategies. A very strict, narrow definition of financial securities, for example, can *exclude* crypto assets from regulation - even if economic or political arguments would support *including* them.

Another institutional factor which could explain regulatory strategy is the type of democratic system in place in the given territory. Voter democracies, such as the US, are known to value self-rule (Hendriks, 2010). This would be a plausible explanation for a tendency towards self-regulation as a regulatory strategy. A participatory democracy, on the other hand, is characterized by low expectations of decisive leadership (Hendriks, 2010). This, in turn, could result in less tough regulation. Therefore, this democratic system might explain less of a traditional command and control approach. In addition, a third institutional factor that may explain regulatory strategy concerns accountability. The degree of political accountability for regulators is expected to impact the toughness of financial regulation (Kwak, 2014).

As outlined in this chapter, there are substantial differences in resources required for the different types of regulatory strategies. The budgetary limitations of a regulator are known to impact regulatory strategy (Viscusi et al., 2018). In the US, congress is responsible for allocating budgets to regulatory agencies (Viscusi et al., 2018). These decisions by other institutions than the regulator itself may very well explain the choice for a certain strategy. Therefore, explanations related to resources can fall under institutional factors as well as economic factors.

Regulatory regimes

This research consists primarily of the analysis of documents on crypto asset regulation published by relevant regulators and authorities. In order to select appropriate documents, the relevant regulatory actors need to be identified. Therefore, the concept of **regulatory regimes** is important for the purposes of this research. A regulatory regime consists of the institutional design of the regulatory actors and their respective responsibilities (May, 2007). The degree of delegation and incorporation of private actors in regulation are central aspects of regulatory regimes (Egan, 1998). Does the regulatory regime for crypto assets in a given market consist

solely of government organizations or are private actors involved as well? Are the responsibilities centralized at one main authority or are they spread out across multiple regulatory agencies? These questions regarding the regulatory regimes are relevant in the process of selecting documents for analysis.

The theory elaborated on up until this point concerns general theory regarding regulation and regulatory strategies. The research question, however, focuses specifically on investor protection regulation for crypto assets. Therefore, the remainder of this chapter will gradually zoom in on the specifics of the research question and connect them to the aforementioned theory.

Investor protection regulation

The research question specifically concerns investor protection. Consumer or **investor protection** is one of the primary objectives of financial regulation, together with the stability of the financial system and the safety of financial institutions (Llewellyn, 1999). The asymmetry in information is an important reason for the need for such protection. Managers of firms, or crypto projects for that matter, have far more inside knowledge and access to information than the average investor or consumer. Protection measures often aim to address this asymmetry (Llewellyn, 1999). Another reason for investor protection is the potential misbehavior of the firm or manager, which can result in investors losing significant amounts of money (Llewellyn, 1999; Shleifer & Wolfenzon, 2002). Investor protection regulation results in a lower concentration of asset ownership and overall higher valuations of assets (Shleifer & Wolfenzon, 2002). For this reason, both egalitarian ideological views and general concerns for economic growth may explain why regulators adopt investor protection regulation.

Although most literature on investor protection concerns traditional assets, such literature is a good starting point for describing different types of investor protection regulation. The literature demonstrates similarities with the theory on regulatory strategies explored earlier on in this chapter. In general, two types of investor protection can be found: law-based regulation and market-based regulation (La Porta et al., 2000). This roughly resembles the distinction between traditional and alternative regulatory strategies, with law-based regulation representing traditional regulation and market-based regulation representing alternative strategies, such as no intervention. This categorization is too general, however, as it lacks further details.

Information and education, more specifically information disclosure, is often employed to protect investors. Regulation that boosts the accuracy and reliability of disclosed information regarding financial assets protects investors by allowing them to to make well-informed investment decisions (Goldstein & Yang, 2017). Some economists argue that firms, as rational actors in the market, have sufficient economic incentives to voluntarily disclose relevant information to investors (Llewellyn, 1999). In that case, the disclosure would arguably fit a no intervention strategy as well as an information and education category. Once again, the flaws in distinction between the strategies become clear.

The effectiveness of information disclosure regulation as investor protection is questionable when the products or assets are complex (Kingsford-Smith & Dixon, 2015). What good is information if the consumer does not understand it? That is why some regulators prefer product intervention as a means of investor protection regulation for complex products (Kingsford-Smith & Dixon, 2015). Such intervention regulates the product itself and thus fits the characteristics of a command and control strategy. The prohibition of distribution, sales or marketing of certain products fall under this category as well (Kingsford-Smith & Dixon, 2015). Hence, strict legal actions and sanctions can be found in investor protection regulation (Llewellyn, 1999; Kingsford-Smith & Dixon, 2015). Such instruments match a command and control strategy (Baldwin et al., 2011).

It is important to note that the insights mentioned in this section are based on conventional assets, rather than crypto assets. Crypto assets are often decentralized by nature and investor protection regulation, or any regulation, may be incompatible with this decentralization (Cumming et al., 2019). Additionally, other characteristics of crypto assets differ from traditional investments. Therefore, the next paragraphs will discuss crypto assets in particular.

Crypto assets

Crypto assets were first introduced at scale in 2009, with the conception of Bitcoin. Crypto assets are digital assets that rely on modern encryption technology to facilitate and protect transactions (Kim et al., 2018). For this proposal, they will be referred to as crypto assets rather than cryptocurrency. The reasons for this are twofold: financial market regulators tend to use the term assets and most crypto assets are too volatile to be used as effective currency (Kim et al., 2018). Crypto assets are often referred to as “coins” or “tokens”. Similar to the initial public offering of stocks, crypto assets are offered to investors through initial coin offerings (Kim et al., 2018). Crypto related products offered to investors seem comparable to traditional financial instruments in several ways. For instance, contractual rights to future transactions are offered to investors (Kim et al., 2018). Crypto assets are commonly used as investments (Hughes, 2017). However, unlike equity in public firms, crypto asset ownership does not come with a stake in the issuing firm or project. Furthermore, where traditional currencies are backed by governments and central banks, this is not the case for crypto assets (Kim et al., 2018). The lack of understanding of the exact future potential and applicability of crypto assets makes them inherently speculative. Since it is not obvious that crypto assets indeed can be considered investments, one may prefer the term consumer protection. Academic literature and policy documents use both. For the purposes of consistency, this thesis will use investor protection.

Protection regulation for decentralized assets

Combining the phenomenon of crypto asset speculation with the concept of investor protection regulation results in a paradox. How can centralized regulation be enforced upon decentralized crypto projects? The existing regulatory frameworks may be difficult to apply to crypto assets, as many assets are decentralized and have no legal entity (Hughes, 2017). In some cases, including Bitcoin, even the founder or initiator of the asset and network is unknown (Kim et al.,

2018). Both the decentralized, virtual technology of crypto assets and their lack of a legal entity make effective investor protection regulation difficult, if not impossible, for many of these assets.

Another practical issue arises when authorities attempt to determine the legal jurisdiction that a given crypto asset falls under. Since jurisdictions are often linked to geographical location and decentralized blockchain is not located at one specific location, crypto assets may not be considered part of the jurisdiction of financial market regulators (Hughes, 2017). If crypto assets do turn out to be within their jurisdiction, enforcement of investor protection regulation is a difficult task. Where the bank transactions of a manager of traditional assets, or a firm, who takes investors money can be reversed, encrypted blockchain transactions are often permanent (Hughes, 2017). These characteristics of crypto assets are likely to have consequences for the regulatory strategies adopted by regulators. Responsive regulation, for example, may be problematic: an enforcement pyramid is not ideal for situations that include a risk of irreversible damage (Gunningham & Sinclair, 2017). Another problem that arises in the regulation of crypto assets is the lack of expertise within financial market regulators with regards to crypto assets (Cumming et al., 2019).

In spite of all these difficulties, investor protection for crypto assets does exist. In the US, regulators address the jurisdiction problem by regulating individuals and firms who participate in crypto asset related activities instead of crypto assets or technology itself (Hughes, 2017). The investor protection regulation concerns *virtual-currency business activity*, a broad definition which even includes digital money utilized in video games (Hughes, 2017). The initial coin offering of crypto currencies, through so-called ICO's, is considered a security in the US and therefore falls under security regulation by the Securities and Exchange Commission (SEC). The SEC explicitly mentioned the protection of investor capital as a reason for regulating ICO's (Cumming et al., 2019). These crypto currencies have some centralized party who can be held accountable. Other, decentralized crypto assets do not have such a party and it remains unclear to what extent they fall under SEC regulation (Cumming et al., 2019). In the EU, regulators are still in the process of researching how crypto assets could fit in the financial markets legislation. Nonetheless, they do explicitly mention investor protection concerns (Ferrari, 2020).

There is not yet a large body of literature on the topic of investor protection regulation for crypto assets. What literature does exist, primarily concerns the US and notes some degree of remaining ambiguity regarding the exact content of such regulation (Hughes, 2017; Cumming et al., 2019). The characteristics of crypto assets, such as decentralization, suggest a wide range of practical difficulties in investor protection regulation for crypto assets.

Knowledge gap

The concepts and theory described in this chapter come together in the knowledge gap. Some form of investor protection regulation is being designed for crypto assets by financial market authorities (Hughes, 2017; Cumming et al., 2019). The existing knowledge in academic theory, outlined in this chapter, includes the different types of regulatory strategies and investor protection regulation, the characteristics of crypto assets and the fact that regulators strive to

protect investors by updating their regulatory framework. Policy documents published by regulators confirm investor protection regulation efforts and demonstrate differences in their exact strategy regarding this investor protection (European Securities and Markets Authority [ESMA], 2022a; Crenshaw, 2021). These differences are not discussed at great length in the current literature, which is often limited to a US context, nor are they compared to literature on regulatory strategies. Such a discussion would be especially relevant considering the contemporary nature of crypto asset speculation and the decentralized characteristics of crypto assets, which provide regulators with significant challenges (Hughes, 2017). The result is an extensive knowledge gap regarding how theory on regulatory strategies relates to investor protection regulation for crypto assets. Therefore, this thesis aims to describe and (begin to) explain the regulatory strategies in investor protection regulation for crypto assets.

Expectations

With regards to the regulatory strategies applied in investor protection regulation for crypto assets, **I expect to see a combination of different strategies**. After all, the literature is clear on the fact that strategies are generally combined in practice, rather than regulators selecting only one specific strategy (Sinclair, 1997; May, 2007; Baldwin et al., 2011; Braithwaite, 2017). Since the literature on investor protection regulation outlines law-based protection regulation, **I would be surprised to not find command and control among the strategies**.

Nonetheless, **I do expect to see the information and education strategy play a major role** in investor protection for crypto assets. The decentralized nature of many crypto assets makes strategies that include actions towards or interactions with any specific regulated party difficult (Kim et al., 2018). Disclosing information to the public and educating consumers about risks do not necessarily require such action or interaction. In the absence of (legal) persons to sanction or force to comply with regulation, shaming may be a more feasible alternative for regulators. The name and technology of crypto assets in violation of regulation can be published and denounced, even if authorities are unable to trace down the actual people behind the products and related activities. Besides, information disclosure is traditionally an important instrument in financial market regulation (Goldstein & Yang, 2017).

In addition to information and education, **some degree of self-regulation would not be surprising.** Self-regulation is often applied in fields where in-depth technical knowledge is called for (Baron et al., 2019). Given the complexities of crypto or blockchain technology and the lack of experience among regulators, as the phenomenon is relatively new, it would make sense to rely on the expertise of actors in the industry. With regards to additional strategies for investor protection regulation, I expect a variety of different strategies depending on the context of each respective market.

Besides the regulatory strategies themselves, this thesis aims to obtain initial insights into the potential explanations for these strategies. Economic factors may explain alternative strategies that leave more room for innovation, which should lead to economic growth (Hahn & Stavins,

1991; Wiener, 2004). **Given that crypto technology is a technological innovation, I expect to see these alternative strategies explained by arguments related to economic growth.**

Any presence command and control strategy is likely explained by the aim of protecting the financial system. After all, economic reasons related to preventing a crisis may lead to this type of regulation (Tarullo, 2019). Moreover, power of ideas factors could explain traditional command and control regulation. Risk averse societies that score high on the cultural dimension of uncertainty avoidance may want to prevent large scale losses of money and thus elect more elaborate investor protection regulation for crypto assets. After all, a high degree of regulation is associated with risk aversion (Hofstede, 2011). Even so, **I do not expect to see a clear cultural explanation for regulatory strategies.** The specifics of complicated regulatory dilemma's for financial market regulators will not necessarily reflect the cultural preference on the level, since many other factors - such as technical aspects of crypto assets and institutional context - have a more direct link to regulation.

Out of the three categories of explanations included in this chapter, I expect institutional factors such as path dependency to play the biggest role. Since the regulators are pre-existing organizations with respective regulatory frameworks, expertise and biases, I would be surprised to see major deviations from their previous regulatory strategies and instruments. **Perhaps this will be less true for the EU, since regulators there are in the process of adopting new regulation for crypto assets** (Ferrari, 2020). Where such deviations do occur, I expect that the characteristics of crypto assets play a role. As outlined in this chapter, decentralization may lead to practical issues when attempting to copy traditional investor protection regulation to the context of crypto assets. Path dependency is also likely to explain differences between regulatory strategies in different markets. Even though the characteristics of crypto assets are similar in all markets, the responsibilities of agencies, regulatory frameworks, legal instruments and other institutional factors may differ. It would thus be unlikely to see the exact same regulatory strategy in all markets.

3. Methodology and data selection

Method

The method applied in this thesis is a content analysis of pre-existing material, namely documents published by regulators. The analysis concerns text, due to the nature of the documents. This method is particularly suitable for comparing different countries in the absence of time or resources to physically travel abroad (Van Thiel, 2015). Four different markets from around the world were the subject of this study. The use of pre-existing material that is available online enabled the comparison of regulatory strategies across these different markets. Another advantage of this method is that, unlike interviews for example, it is not heavily dependent on the cooperation of actors in the field. Operationalisation is important for content analysis, in order to ensure that the research provides valid results. A detailed elaboration on operationalisation of the material can be found later in this chapter.

The choice for document analysis had a number of reasons. First of all, this method is suitable for finding facts and opinions and for reconstructing underlying argumentation (Van Thiel, 2015). This closely resembles the aim of identifying and explaining regulatory strategies. In addition, the online availability of written policy documents, publications and reports allowed for relatively easy collection of data. Besides, regulation is often inherently published and outlined in written sources for purposes of legal certainty and transparency (Burnham, Gilland, Grant, & Layton-Henry, 2004). This makes document analysis a logical match. Another reason for choosing document analysis concerns feasibility. As the research was conducted in a limited time period, other methods that result in more dependency on respondents for planning - such as interviews - were less preferable. An advantage of document analysis is that the research itself doesn't impact the raw data, as they were not written in the context of this research (Van Thiel, 2015). There are, however, downsides to this method as well. Since the authors or publishers of such documents were regulators and market authorities, there is a risk that their interests and biases influenced the data (Van Thiel, 2015). Hence, the documents may not fully represent the actual strategy in place - or its true policy objectives. In order to mitigate this risk, I contacted several experts on financial markets and stakeholders in crypto regulation and asked for their perspectives.

Initial pilot study

In preparation of the research, a number of publications by regulators on the topic of crypto asset regulation were explored. The websites of financial market regulators, such as the SEC and ESMA, were scanned for pages and documents that mention "crypto assets". These financial market regulators were selected because they were mentioned in the literature (Cumming et al., 2019; Ferrari, 2020). Where the literature did not mention the relevant regulators, as was the case with Australia, a Google Search for "SEC equivalent Australia" pointed out potentially relevant actors. Subsequently, the websites of these actors were searched for "crypto assets" to verify if they were indeed relevant. The pilot study was done for

an initial mapping of the field, to get a preliminary idea of where to find potentially relevant documents.

Abductive approach

This thesis followed an abductive approach to research. Abductive research allows for new theoretical insights. Yet, contrary to purely inductive research, there is careful consideration of existing theory throughout the research process (Timmermans & Tavory, 2012). The phenomenon of investor protection regulation for crypto assets is rather new. Furthermore, the decentralized nature of many crypto assets make regulation especially challenging, which in turn makes new theoretical insights likely to occur. On the other hand, there was much knowledge available regarding regulatory strategies in general and investor protection regulation in particular. Ignoring all this knowledge would have been a mistake, as potential new insights are not per definition unrelated to the literature. Instead, insights from this research could build on existing theory. The methodology paid attention to the existing theory while being open to new insights regarding the sometimes paradoxical phenomenon of crypto asset regulation.

In abductive research, insights are generally derived from findings that are surprising or puzzling, compared to the existing academic theory. Therefore, abduction is especially suited for formulating an explanatory hypothesis (Timmermans & Tavory, 2012). That is similar to the aims of this thesis: description of a new phenomenon and a first attempt at finding explanations for the observations. During the analysis of the results, surprising findings were compared to the literature. Where the theory from the previous chapter fell short, additional literature research was conducted.

In summary, the use of deductive research would have risked being too insensitive to the particular characteristics of the phenomenon of investor protection regulation for crypto assets, while the use of inductive research would have risked being too theoretically uninformed and subjective. The solution was an abductive approach. In the methodology the approach is reflected by using the extensive theoretical framework in the axial codes, while at the same time applying open coding and subsequently adding new axial codes to be sensitive to any peculiarities.

Scope and population

The analysis focused on investor protection regulation for crypto assets in the US, the EU, Australia and the UK. A comparison of several different markets, rather than one single market, aided the explanatory part of the research. By focussing on the differences between markets, potential causalities could be spotted more easily. Besides, until now the literature on the phenomenon of investor protection regulation for crypto assets was largely focussed on the US (Hughes, 2017; Cumming et al., 2019).

The reason for limiting the scope to these four markets was of a practical nature. Relevant documents are published online and in English in all four markets. A small number of additional countries would also meet these requirements. However, the limited time available for this thesis would have made analysis of a larger number of countries likely to lack the depth required for a substantive analysis.

Regulatory actors

Relevant regulatory actors were identified through the initial pilot research into publications by regulators and derived from the literature on crypto asset regulation and investor protection regulation (Cumming et al., 2019; Ferrari, 2020). A number of actors were added or removed from the selection during the data selection process, the pilot and the coding itself. Selected documents by the Financial Conduct Authority (FCA) referred to an inter-institutional Cryptoassets Taskforce. Searching the FCA website for “Cryptoassets Taskforce” resulted in a document which outlined that this taskforce consisted of the FCA, the Bank of England and HM Treasury (HM Treasury, FCA, & Bank of England, 2018). The latter two were then added to the list of potentially relevant regulatory actors. Additionally, contact with the regulatory actors themselves helped to further clarify which regulators could be relevant. For instance, an insider at ESMA referred to a joint warning against crypto issued by the three European Supervisory Authorities (ESAs). Subsequently, the websites of all three authorities were searched for publications related to crypto assets. It became apparent that two out of the three were focussed on money laundering and tax rules alone, for banks and insurance companies respectively. These regulators were therefore not relevant for investor protection regulation and were removed from the list of relevant regulators.

Market	**Relevant regulatory actors**
United States	Securities and Exchange Commission (SEC)
	Commodity Futures Trading Commission (CFTC)
European Union	European Securities and Markets Authority (ESMA)
	European Commission (EC)
United Kingdom	Financial Conduct Authority (FCA)
	Her Majesty’s Treasury (HM Treasury)
	Bank of England (BoE)
Australia	Australian Securities and Investments Commission (ASIC)
	Australian Competition and Consumer Commission (ACCC)
	The Senate

Table 1. Relevant regulatory actors

Other regulatory actors were explored as well, yet turned out to not be involved in the type of regulation that this research focuses on. One of the documents found on the website of ASIC during the data selection referred to a working group on crypto, led by the Australian Treasury (ASIC, 2021c). A thorough search of the Treasury website, using terms such as “crypto assets”, pointed out a lack of investor protection regulation for crypto assets. A similar procedure led to the exclusion of the Consumer Financial Protection Bureau in the US. Finally, it is worth noting that, whereas the Australian Senate and European Commission (EC) were included in the list of relevant regulatory actors, political actors in other markets seemed to assign responsibilities and resources for regulation to agencies rather than formulating regulatory strategies for investor protection themselves. Again, this insight is derived from documents encountered during the data selection (Commodity Futures Trading Commission [CFTC], 2022).

Stakeholders

Besides the regulatory actors, other stakeholders exist as well. Although regulatory strategy is the topic of this research and therefore regulators were most relevant, other actors might have been able to provide additional information and point out omissions in the regulators’ publications. For that reason, a large number of stakeholders were approached with the request to provide additional information. Despite approaching dozens of relevant stakeholders, including crypto businesses, brokerages and consumer organizations, only three people were willing to answer questions regarding this thesis. All three were financial journalists who had written on the topic of crypto regulation.[2] Although stakeholders in all four markets included in the scope of analysis were contacted, the ones that actually contributed represent only the EU and the UK. Although none of them were of the opinion that regulator publications underrepresented any important aspect of crypto regulation, they were able to confirm the identified relevant regulatory actors and provide context for analysis of the publication (P. Brasser, personal communication, May 27, 2022; P. Kort, personal communication, May 31, 2022; Anonymous financial journalist, personal communication, June 9, 2022).[3]

Time period

A limited time period reduces the chance that differences in context due to the time of publication distort the research. For instance, the amount of consumer money invested in crypto assets before the outbreak of the COVID-19 pandemic was much lower than it has been since then (ASIC, 2022). Furthermore, when searching for crypto asset regulation on the websites of relevant regulators, there was a clear increase in publications on the topic in recent years. Regulators mentioned being triggered by a rise in crypto asset speculation following the outbreak of the COVID-19 pandemic (ASIC, 2022). Therefore, the analysis focused on documents published between May 1st 2020 and May 1st 2022. During the selection of

[2] Two of the journalists work for reputable financial newspapers, the third is the editor-in-chief for an online platform for investors.
[3] One of the journalists preferred to remain anonymous because otherwise a formal procedure with his employer would have been required.

documents for analysis it became clear that the amount of relevant documents published by regulators had indeed peaked in these two recent years. In cases where a publication had two dates, the initial publication date and the date of the most recent edit, the latter was used for determining the time of publication. Some agencies use new publications, while others simply update existing ones. Therefore, large amounts of information from within the relevant timeframe would have been ignored if the date of initial publication was used instead.

Document selection

Policy documents, published speeches by directors of regulatory agencies, reports and other publications by regulators and authorities were widely available online. These documents also included press releases, annual reports, announcements and proposals for new regulations, as well as guidelines for actors in the crypto asset markets. In addition, warnings for investors turned out to contain relevant hints regarding the overall regulatory strategy employed. Even though officials in some cases pointed out that their speech contained their personal view, the speeches still referred to the policy of their agencies and were published on the official agency websites. Therefore, such speeches were included in the selection.

Documents published by the aforementioned actors within the selected time period that came up as results for keywords and phrases such as “crypto asset regulation” and “crypto assets investor protection” through the search tools of regulator’s websites were selected and searched for relevant sections or chapters. This came with a number of challenges. Regulators, even those in the same market, sometimes used different terminology. The SEC used “crypto assets”, while their colleagues at the CFTC referred to the same phenomenon as “digital assets” or “cryptocurrency”. In order to incorporate as many relevant documents as possible, the keywords used to search for documents were updated to include these. Another challenge was the difference in sensitivity of search tools. The ACCC search tool showed results that contained merely one of the keywords entered in the search bar. For instance, “crypto asset consumer protection” resulted in a list including all documents mentioning the word “consumer”. Since the word is part of the name of the organization, this meant that the list was long and full of irrelevant information. As a workaround, the word “crypto” was put into the search bar and subsequently the given results were scanned for signs of consumer or investor protection. The EC website search tool was so sensitive that it had over 270.000 results for “crypto-assets investor protection”. Therefore, a different method was applied to selecting relevant EC documents. This was done through references to EC publications on and regulation of crypto assets by the European Supervisory Authorities and snowballing[4] from there. There is a risk that some relevant documents have not been selected, as a result of this alternative method.

Subsequently, the selected documents were assessed for their relevance based on two aspects. First, there was a scan of the title and the introduction or background section. This usually made clear whether or not the document concerned crypto assets and might concern, directly or indirectly, investor protection regulation. Second, unless it was obvious the document was

[4] The term snowballing refers to the process of finding additional sources through referrals by current sources.

irrelevant for the thesis, the document was searched for a number of keywords including “crypto”, “crypto assets”, “digital assets”, “investor protection”, “consumer protections” and “protect”. In addition to determining the relevance of a document, the second step pointed out which sections or paragraphs should be coded.

Sampling

In total, 71 documents fitted the selection criteria and were initially selected for further analysis. Some of the documents were over 100 pages long. Careful analysis of these documents, in search of relevant data, takes time. This is especially true because of the open coding and the subsequent comparison of these codes to the axial codes, outlined later in this chapter. Given the time limits for this thesis, not all documents within the scope of this research were used. Instead, for the purposes of feasibility, one in two documents was analyzed. The selected documents were sampled by listing them based on their market: first the documents from the US, then the document from the EU, etcetera. Within each group, the documents were then listed based on the publishing regulator. These first two steps ensured that no regulator or market is underrepresented, compared to the available documents. Any regulator that published at least two relevant documents is now included in the final selection. Next, every second document was selected for analysis - without regard for the type of document, date of publication or other factors. This last step prevented personal bias or expectations from polluting the sampling process.

Not all markets contained a similar number of relevant documents. For instance, the US accounted for 32 out of the 71 documents. Instead of sampling proportional to the amount of relevant documents, one might prefer selecting an equal number of documents for each market or regulator. The problem is that this would have excluded much of the relevant data and severely limited the sample size, which would make any insights resulting from the data less valuable (Van Thiel, 2015). This issue is discussed further in the discussion section in chapter five.

Within the selected documents, anything that seemed relevant to answer the research questions was coded. This included links to theoretical concepts, data that was highlighted as important and information that was repeated often.

Operationalisation

Since the studied documents were not written for the purposes of research, they tend to not explicitly mention which regulatory strategies they apply and why. This results in a gap between the research and the data that can be bridged by operationalisation (Van Thiel, 2015). Instead of merely looking for the explicit mentioning of the regulatory strategies named in the literature, proxies were used as an indication for the presence of these strategies. The proxies were based on characteristics of the strategies as described in the previous chapter. In addition, the pilot coding and final coding resulted in some of the proxies. The list below contains a number of proxies for each strategy. While this list proved helpful in the identification of strategies in the documents, it was not an exhaustive list (in line with the abductive approach). Not all relevant data contained a proxy.

Regulatory Strategy	**Proxies**
Command & Control	Sanctions, legal action, charges, prohibition, fines, standards, rules
No Intervention	Deregulation, unregulated, unprotected
Incentive-based	Incentive, subsidies
Information & Education	Information, disclosure, naming and shaming, publication, education, warnings
Self- & Co-regulation	Industry or sector regulation, private regulation, industry organizations,
Market-harnessing Controls	Competition, market, supply and demand
Responsive Regulation	Escalation, compliance, warning, mention of motives of actors

Table 2. Operationalisation for regulatory strategies

In addition to recognizing regulatory strategies, the data was scanned for potential explanations for these strategies. Power of ideas factors turned out to be relatively difficult to recognize. Besides the explanations derived from the literature, alternative explanations were welcomed as well. This posed a challenge, as the researcher had to constantly be actively looking for alternative options. Nonetheless, based on the theoretical framework, some proxies could be formulated beforehand. These proxies can be found in the table below. Besides the literature, the pilot offered useful insights for locating explanations as well. Where one existed, a background or introduction section turned out to be the place where hints of underlying explanations are often located. As was the case for regulatory strategies, the list of proxies for explanations was not exhaustive.

Explanation category	Proxies
Economic factors	Innovation, economic growth, the market, supply and demand, efficiency, stability, protecting the economy, trust in the economy.
Power of ideas factors	Risk, together, fair, liberty. Normative phrases (“should”).
Institutional factors	Reference to existing frameworks, legislation, regulation, instruments (path dependency). Institutional input, limits to authority, instruments at disposal of agency.
Other / explaining in general	Mentioning of priorities, policy goals, aims, missions etcetera. Descriptions of the process that led to certain legislation.

Table 3. Operationalisation for explanations

Coding

Subsequently, the selected data was coded through a process of open coding. Although axial codes already existed, relying on these codes instead of open coding would have been a mistake. The theory that the axial codes were based on, concerns regulatory strategies in general. It remained unclear how well the theory applies to the specific phenomenon of investor protection regulation for crypto assets. Open coding allowed for new codes, derived from the data itself. In line with the abductive approach, codes that differed from expectations raised by the literature were embraced instead of ignored. Should existing theory fall short in describing and explaining investor protection for crypto assets, then this would be an academically relevant insight. Open coding ensured that the analysis was not insensitive to the particular characteristics of the topic at hand.

After open coding, the process continued with axial coding. The axial codes in table 4 were derived from the theory. They provided a starting point, but additional axial codes were added later based on the data itself. Regulators often combine regulatory strategies in practice (Sinclair, 1997; May, 2007; Baldwin et al., 2011; Braithwaite, 2017). Therefore, multiple axial codes could be assigned to a single piece of data.

Regulatory Strategies (1)	Traditional (1.1)	Command & Control (1.1.1)
	Alternative (1.2)	No Intervention (1.2.1)
		Incentive-based (1.2.2)
		Information & Education (1.2.3)
		Self- & Co-regulation (1.2.4)
		Market-harnessing Controls (1.2.5)
	Other (1.3)	Responsive Regulation (1.3.1)
Explaining regulation (2)	Economic Factors (2.1)	Innovation / growth (2.1.1)
		Protecting the economy (2.1.2)
	Power of Ideas Factors (2.2)	Cultural (2.2.1)
		Ideological / political (2.2.2)
	Institutional Factors (2.3)	Path-dependency (2.3.1)
		Democratic System (2.3.2)

Table 4. Axial codes

Finally, selective coding shaped the hierarchy of the results. Selective coding included factors such as the frequency of a code and the degree to which it provided a plausible explanation (for codes regarding explaining regulation).

Pilot coding

In a pilot, four documents were coded through open coding, after a substantive inventorisation of the relevant literature. The documents represented all four markets: one document for each market. The open coding resulted in codes such as “decentralized” and “combined strategies”. Furthermore, codes resulting from the open coding included specific regulatory instruments that are not immediately an obvious application of the aforementioned strategies. An example of this is the code “whistleblower program”. The pilot coding pointed out that indicators of regulatory strategies are widespread and recognizable throughout publications by regulators. Recognizing potential indicators for explanations for these strategies proved more difficult than recognizing strategies, as they were more implicit. This underscored the importance of being open to any hints of such explanations during the analysis of the documents.

Reliability and validity

A number of measures were included to ensure the reliability and validity of this research.

In order to increase the reliability of this thesis, a second Master Public Governance student coded a sample of the data with the axial codes outlined in this chapter. Their results were compared to my own, to ensure that the analysis is reliable. Out of the ten pieces of text that were included in the sample, eight were coded exactly the same. Two pieces were coded partially the same and none were completely different.

Another measure for increasing validity consisted of questioning the three aforementioned journalists, to reduce the risk of biases or motives of regulators (authors) disturbing the findings. Since securing interviews was often impossible, some respondents did agree to answer some questions via email. Although these respondents were not representative for all stakeholders, as only journalists were willing to contribute, they were helpful in making sure that I was focussing on the relevant regulatory actors and developments.

Furthermore, this chapter contained an elaborate step-by-step description of the entire research process, including practical decisions regarding data selection, in order to promote replicability of the research. The use of proxies, as part of operationalization, served to boost the internal consistency of the coding. A pilot study and a pilot coding were conducted to increase the quality of proxies and the completeness of the list of relevant regulatory actors, which in turn should benefit validity. Finally, the large sample size (consisting of half of all relevant documents) should increase the content validity. A further reflection on reliability and validity is incorporated in the discussion section in chapter five.

4. Analysis and findings

The data

Before turning to answering the research question, this chapter first outlines a number of general insights regarding the data. The data that was collected and analyzed as a part of this research included 210 segments of text, originating from 35 different documents published by regulators. The chart below demonstrates how much data was incorporated for each market.

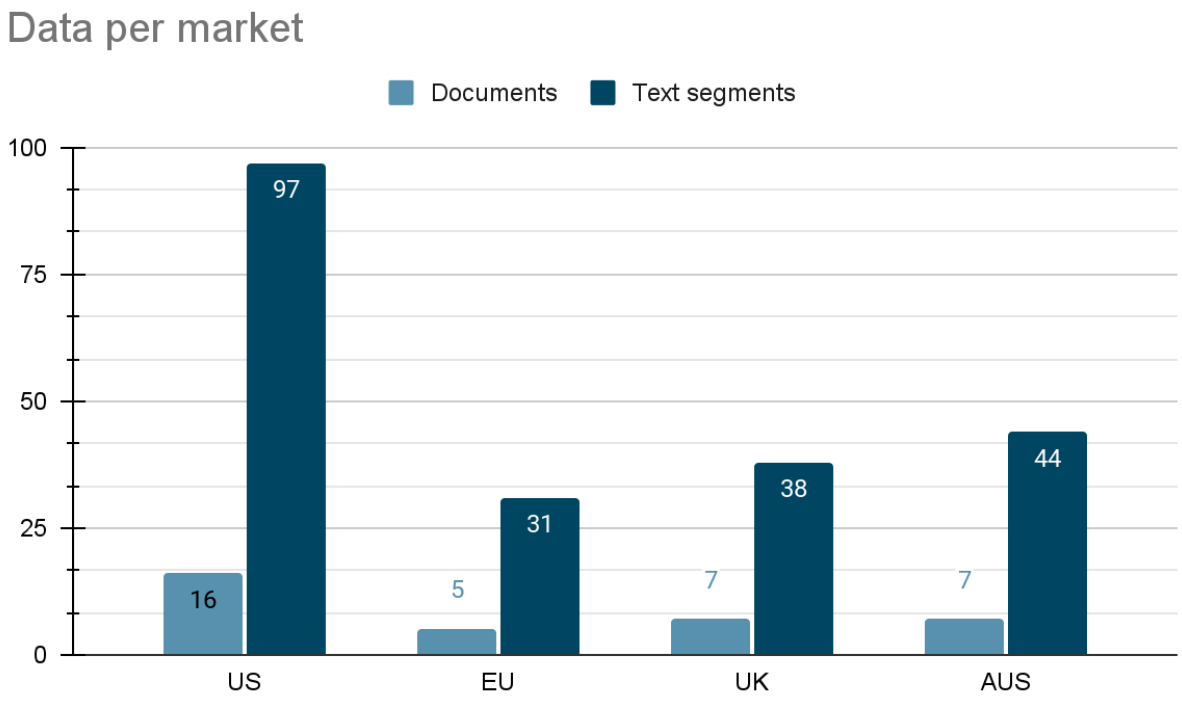

Figure 3. Data per market

As demonstrated in the chart above, there was significantly more relevant data found at US regulators than regulators from the other markets. This could explain why most of the academic literature on investor protection for crypto assets focuses on the US context. Furthermore, the chart seems to confirm the literature regarding the different stages of regulating crypto assets in the US and the EU: the US has already regulated crypto assets, while the EU is still preparing legislation (Cumming et al., 2019; Ferrari, 2020).

What regulatory strategies can be recognized?

Overall

The axial codes for regulatory strategies found most frequently in the data are listed in the table below. These three strategies, all of which were described in the academic literature on regulation, seem to be dominant in investor protection regulation for crypto assets.

Regulatory strategy	**n**
Command & Control	45
Information & Education	32
No intervention	20

Table 5. Strategies found most frequently

Since these regulatory strategies are broad umbrella categories, a more detailed elaboration is necessary to understand what they look like in the context of investor protection regulation for crypto assets.

The **command and control** strategy expressed itself in a number of different ways. For example, many regulators require actors in the crypto industry to be authorized by them in order to be allowed to operate. Since it seemed difficult to link this to a regulatory strategy based on the theoretical framework, a return to the literature was required. This pointed out that laying down conditions for entry into a sector falls under the command and control strategy (Baldwin et al., 2011). The quote below provides an example of this type of regulation.

"A firm must be authorised by us to advertise or sell these products in the UK – check our Register to make sure the firm is authorised." (FCA, 2022a)

In addition, the mentioning of severe sanctions was one of the most found indicators of command and control regulation. Legal action and sanctions characterize command and control regulation (Baldwin et al., 2011). As the next quote demonstrates, such characteristics were present in the data.

"In that case, we charged two Florida men and their Cayman Islands company for unregistered sales of more than $30 million of securities and for misleading investors concerning the operations and profitability of their business" (SEC, 2021c)

Information and education elements were recognized in many of the documents as well. Within this category, two types of actions by regulators are especially popular: information disclosure regulation and warning investors or consumers. Sometimes the warnings consisted of a side note in a speech on another topic, while in other cases the warning itself was the main

purpose of the publication. An example of the latter is the following quote by EU regulators:

"The European Supervisory Authorities (EBA, ESMA and EIOPA – the ESAs) warn consumers that many crypto-assets are highly risky and speculative. These are not suited for most retail consumers as an investment or as a means of payment or exchange. Consumers face the very real possibility of losing all their invested money if they buy these assets. Consumers should be alert to the risks of misleading advertisements, including via social media and influencers. Consumers should be particularly wary of promised fast or high returns, especially those that look too good to be true." (ESMA, 2022b, p.1)

There was less diversity in indicators of **no intervention**. This strategy primarily concerns emphasis on the fact that much of the crypto sector remains unregulated and investors are often not protected by investor protection. The mentioning of a lack of regulation regularly goes hand in hand with the aforementioned warnings, as exemplified by the next quote.

"Consumers should be aware of the lack of recourse or protection available to them, as crypto assets and related products and services typically fall outside existing protection under current EU financial services rules." (ESMA, 2022b, p.1)

As underscored by the use of the words “existing” and “current” in the quote above, the large degree of no intervention may be temporary. As regulators are in the process of formulating new regulation, currently unregulated actors or services may in the future fall within the scope of investor protection regulation. For the EU context specifically, two separate sources - both financial journalists - were asked about crypto regulation in Europe. Both journalists referred to the Markets in Crypto-assets (MiCA) Regulation, which is currently being prepared by the European Commission (P. Kort, personal communication, May 31, 2022; Anonymous financial journalist, personal communication, June 9, 2022). The MiCA Regulation was also mentioned by EU regulators in several documents.

Besides these three strategies, which were recognized in the data most often, indicators of other regulatory strategies were found as well. There were some signs of self-regulation, mainly in the US. In particular, the SEC documents referred to self-regulation regarding compliance programs on multiple occasions. An example can be found in the quote below.

“Our priorities cover a broad landscape of potential risks to investors that firms should consider as they review and strengthen their compliance programs." (SEC, 2022a)

The data indicated barely any signs of market-harnessing controls. Incentives were the least popular: not a single indicator of this strategy was found. Additionally, hardly any indicators of responsive regulation were found in the data. An enforcement pyramid, typically used in responsive regulation, requires the regulator in question to have relevant enforcement instruments at their disposal for each step in the pyramid (Gunningham & Sinclair, 2017). In reality regulators often have limited authorities. This could potentially explain the lack of responsive regulation. The fact that crypto transactions are often irreversible could also play a

role (Hughes, 2017). After all, responsive regulation does not match situations with a risk of permanent damage (Gunningham & Sinclair).

Surprising results

This thesis was purposefully designed to be able to include results that deviate from theoretical expectations. Besides the strategies outlined in the theory, several additional indicators of regulatory strategy were found in the data, yet did not match one of the strategies derived from the literature in particular. When repeated throughout different sources, they may be relevant and deserve to be discussed.

Surprising code	**n**
Inter-institutional cooperation	8

Table 6. Surprising code for strategies

Inter-institutional cooperation in regulating crypto assets entails cooperation both on a national and international level. Although there is no clear link to one of the strategies outlined in the theoretical framework, there is definitely a strategic aspect to cooperation. Since blockchain technology is not limited to one specific geographical location, actors behind crypto assets or crypto related services could be anywhere in the world (Hughes, 2017). For that reason, international cooperation between regulators seems to be helpful. Moreover, regulators can overcome limitations to their legal authority by joining forces with other regulators who may be better equipped from an authority perspective. The three quotes below serve to represent what inter-institutional cooperation looks like in the documents.

"The Commission appreciates the assistance of the Cayman Islands Monetary Authority, the Hong Kong Securities and Futures Commission, the Monetary Authority of Singapore, the Ontario Securities Commission, the Romanian Financial Supervisory Authority, and the Thailand Securities and Exchange Commission." (SEC, 2021a)

""In particular, I've asked staff to work with the Commodity Futures Trading Commission (CFTC) on how we jointly might address such platforms that might trade both crypto-based security tokens and some commodity tokens, using our respective authorities." (SEC, 2022b)

"The digital asset industry in the U.S. does not fall under a single comprehensive regulatory regime. Instead, the CFTC and other federal agencies and state regulators have all been responsible for collectively establishing the existing, and very incomplete, regulatory environment. And while our oversight capabilities are generally complimentary, market regulation and financial supervision often rely on the development of cooperative arrangements." (CFTC, 2022)

In addition to the surprising axial codes, there was an open code - explaining regulation[5] - that could be linked to two different strategies. Explaining regulation to those actors, generally undertakings, that are being regulated arguably constitutes education. Therefore, this code should arguably fall under information and education (Gunningham & Sinclair, 2017). However, explaining regulation can also be a part of responsive regulation. After all, the provided explanations of regulation for the regulated actors align with the principles of responsive regulation. Building the capacity of actors to comply with the rules through support and education is one of the core principles of responsive regulation (Braithwaite, 2011). Hence, there is a case to be made for linking this code to responsive regulation. The fact that this code could indicate multiple different strategies once again demonstrates the limitations of attempting to make a hard distinction between different strategies.

While the most dominant regulatory strategies found in regulator documents were in line with strategies described by the literature, not all findings were a perfect fit. The surprising axial code of inter-institutional cooperation was the primary example of this. In addition, there were sometimes difficulties linking a code to one specific strategy.

Comparing the markets

When comparing the strategies found in different markets, significant differences between the markets become apparent. Traditional command and control regulation is the undisputed champion in the US, while information and education prevails in all three other markets. Nonetheless, both strategies are found in all four markets. Additionally, the strategy of no intervention is present in all markets as well. Besides these three strategies, no other strategy was present in all four markets. The aforementioned list of most dominant strategies is therefore accurate in terms of the three most common strategies, although the order is heavily influenced by the US as an outlier. When ranking the strategies based on the number of markets in which they are the most present strategy, information and education would rank as number one. Either way, the same three strategies end up best describing investor protection regulation for crypto assets.

Another remarkable finding is that the US demonstrated significantly more indicators of self-regulation than the other three markets. The documents from the UK and the EU even contained no indicators of this strategy whatsoever.

Furthermore, differences in regulation between markets can be found regarding the surprising codes. In the US, inter-institutional cooperation seems to be a key element of the regulatory strategy. After command and control regulation, it is the second most frequent axial code in the data from that market. Regulators in the EU and Australia, on the other hand, put more emphasis on explaining the rules. This could be linked to the fact that information and education is the dominant strategy in both markets. As elaborated on earlier in this chapter, explaining regulation to actors can be seen as part of this strategy. Remarkably, the UK data barely demonstrates indicators of strategies other than those outlined in the academic literature.

[5] Not to be confused with the codes for explaining regulatory strategies

Some codes only appeared in EU documents and were therefore not elaborated in great detail here, yet they can still tell us something about strategy in the regulation of crypto assets. The EU documents mentioned specifically that they aim to design new regulation that is tailored to crypto assets. As a part of the process of designing this new framework[6], regulators make use of a pilot regime:

"The proposal clarifies the application of existing EU rules to crypto-assets, introduces a pilot regime for crypto-assets covered by these rules and establishes a new EU legal framework for crypto-assets that are not covered by these rules, based on a taxonomy of definitions of different types of crypto-assets." (European Commission, 2020c, p.9)

This learning approach might be considered a separate strategy, as it does not match any of the regulatory strategies outlined in the literature (Baldwin, 2005; Baldwin et al., 2011).

Explaining the strategies

Overall

A first indicator of how well a certain factor might explain regulatory strategies is the number of times its proxies were identified in the data. The axial codes derived from literature that were recognized most often are demonstrated in the table below.

Explaining factor	**n**
Economic factors (combined)	22
Institutional factors (combined)	20

Table 7. Explaining factors found most frequently

Economic factors as potential explanations for regulatory strategies were found the most in the documents. This included reference to innovation and the importance of innovation, as well as the motive of protecting the economy. In addition, efficiency, resources required or available for enforcement and the economic interests of specific groups fall under this category of explanations.

Concerns regarding innovation were among the more obvious motivations of regulators, as demonstrated by the quote below.

[6] The proposed framework includes disclosure rules and aims for crypto related innovations to benefit companies within the EU, for instance through new methods for crowd-funding (European Commission, 2020a). The framework is not yet definitive.

“Today's package will boost Europe's competitiveness and innovation in the financial sector…” (European Commission, 2020b)

In contrast, concerns regarding protection of the economy were more implicit. Regulators linking crypto speculation to past economic crises may be an indicator of such concerns:

"Seeing these ads reminded me that, in the lead-up to the financial crisis, subprime lender AmeriQuest advertised in the Super Bowl. It went defunct in 2007. A few years before that, according to Axios, Fourteen dotcom companies advertised during the 2000 Super Bowl, most of which are now defunct.” (SEC, 2022b)

There seems to be a difference in how regulators in different markets perceive economic interests. This will be examined in more detail at a later moment in this chapter.

Besides economic factors, there was a considerable number of codes relating to **institutional factors** that could explain regulatory strategies. The vast majority of these codes were some form of path dependency. Regulators often applied pre-existing frameworks, based on their institutional context and past experience with regulating conventional assets, to crypto assets. The three quotes below paint the picture of regulators who regulate a new phenomenon the same way they are used to treating traditional financial assets.

“First is getting the platforms themselves registered and regulated much like exchanges. Congress gave us a broad framework with which to regulate exchanges. These crypto platforms play roles similar to those of traditional regulated exchanges. Thus, investors should be protected in the same way.” (SEC, 2022b)

“When a new technology comes along, our existing laws don’t just go away.” (SEC, 2022b)

“(...) all securities offered or sold to U.S. investors – regardless of their form or name – must comply with the U.S. securities laws. The purpose here is to protect investors and the integrity of our markets by ensuring that investors are provided proper disclosures and the products are subject to regulatory scrutiny.” (SEC, 2021d)

The third category of explaining factors derived from the literature, power of ideas, was found way less often than economic and institutional factors. There were no indicators of cultural explanations for regulatory strategies.[7] There were, however, some hints of ideological factors that may play a role in explaining preferences regarding regulatory strategies. The hints were often implicit. In the next quote, one may read a link between fairness, arguably an ideological term, and intervention in the market in crypto assets.

“Our vision is to ensure a fair, strong and efficient financial system for all Australians. This includes crypto-asset financial products, and they continue to attract our attention.” (ASIC, 2022)

[7] As will be discussed in the next chapter, this is likely the result of a mismatch with the type of data.

Surprising results

In addition to the axial codes derived from the theory, there were a number of new axial codes formulated during the coding process. The new code relating to explanations that was found, by far, the most often was the characteristics of crypto.

Surprising code	**n**
Characteristics of crypto	19

Table 8. Surprising explanation

The **characteristics of crypto assets** can impact the regulation of these assets. This category includes reference to the decentralized characteristics of blockchain technology and the difficulties in holding decentralized networks accountable. These characteristics are in line with challenges mentioned in the literature on crypto regulation (Hughes, 2017; Kim et al., 2018). Additionally, there were examples of regulators mentioning the level of retail investor participation and the amount of leverage involved in crypto speculation as issues of concern. While these matters are related to the phenomenon of crypto asset speculation, they are not inherent to crypto assets. Similar characteristics may, at times, be found for traditional assets. An example of decentralized characteristics as an explanation for regulation is the following quote:

"…to whom does ASIC turn to ascertain the directing mind and will of a DAO? It is not clear who is accountable if things go wrong, or don't go as intended or anticipated. Nor is it clear how a DAO itself can be held accountable in a court of law." [8] (ASIC, 2021b)

Another new potential explanation found in the data was public or stakeholder input. Where such input impacts regulatory choices, they may impact regulatory strategy. An example is a consultation process in Australia, referred to in the quote below.

"The consultation also seeks views on two alternative regulatory models. I encourage industry to engage with the proposals." (ASIC, 2022)

Comparing the markets

As was the case with the regulatory strategies themselves, there are several noteworthy differences between markets in explanations for them. In the US, path dependency seems dominant in determining regulation. On thirteen different occasions, US regulators outlined that

[8] DAO stands for decentralized autonomous organization.

they will apply pre-existing regulatory frameworks to crypto assets. That means that the pre-existing regulatory strategies will be copied for crypto assets. I presented these findings to a financial journalist who confirmed that the US applies a pre-existing framework and the EU is designing a new one (Anonymous financial journalist, personal communication, June 9, 2022). They also noted that the UK is somewhere in between. There are nevertheless some concerns within US regulators about this approach for crypto assets being expressed, as exemplified by the quote below.

"(...) truly decentralized platforms do not mesh well with a regulated approach designed for centralized finance." (SEC, 2021b)

In the EU, there is a relatively strong emphasis on innovation. Innovation is explicitly mentioned as a positive phenomenon in documents regarding crypto regulation. At the same time, in contrast to the US, no path dependency indicators were found in EU data.

Remarkably, no single explanatory factor was truly dominant in the UK data. As was the case in the EU, no path dependency indicators were found. Hints of any explanation for regulatory strategies were scarce in the UK documents. Perhaps this indicates a different style of communication or level of transparency by financial regulators.

Finally, in Australia there was a strong emphasis on the characteristics of crypto assets as an explanation for regulation. The aforementioned quote regarding DAO's is a good example of this.

While significant differences between markets exist when it comes to explaining regulatory strategies, all markets demonstrated at least some proxies for two explanations: economic factors and the characteristics of crypto assets.

Plausible explanations

It should be noted that a mere description of the potential explanations found most often in the data does not constitute a true explanation of regulatory strategies. While it contains valuable initial insights, the section above does not paint the full picture. Therefore, based on a substantial second analysis of the underlying data, the next section will attempt to explain *how* these factors explain regulatory strategies. During the return to the data, the main question that was asked is: **how** can this explain regulators adopting certain regulatory strategies?

The result of that process was the identification of two fields of tension that seem to explain choices regarding regulatory strategy:

1. <u>Conflicting ideas of what drives the economy</u>

Conflicting ideas of what drives the economy were found in the different codes that made up the

category of economic factors. The ideas include innovation, rules that benefit the economy by instilling trust in people and the protection of the financial system.

2. Old versus new regulatory framework?

The choice for applying either a pre-existing or a brand new regulatory framework to crypto assets seems related to institutional factors - such as path-dependency - versus optimally matching regulation to the specific characteristics of crypto assets.

The next sections consist of a further elaboration on the two fields of tension.

Conflicting ideas regarding the economy

For a demonstration of how conflicting ideas of what benefits or drives the economy explains regulatory choice, this section will proceed to compare the US to the EU.
In the US, regulators mention trust or confidence as a fundamental requirement for successful markets. The two quotes below underscore those insights.

“In my view, regulation both protects investors and promotes investor confidence, in the same way that traffic laws protect drivers and promote driver confidence. It’s at the core of what makes markets work.” (SEC, 2022b)

"... examinations against our laws and rules are fundamental to instilling the trust necessary for our markets to thrive.” (SEC, 2022a)

In addition, as demonstrated by the quote regarding economic crises mentioned earlier on in this chapter, US regulators seem to want to protect their economy or financial system from similar catastrophe. Both regulation aiming to increase trust and regulation aiming to protect the financial system from harm can be linked to an overall protective attitude in favor of regulation and intervention.

In the EU, regulators proclaim to apply a balanced approach that includes conflicting economic factors:

“The ‘Regulation on Markets in Crypto Assets' (MiCA) will boost innovation while preserving financial stability and protecting investors from risks.” (European Commission, 2020b)

However, EU regulators put a strong emphasis on the value of innovation, as outlined earlier in this chapter. This is where they outline different priorities than their US counterparts.

What is the result of these conflicting economic ideas for regulatory strategies? The balance of innovation versus factors such protection and trust seems to translate into a balance of alternative versus traditional regulation. Tough regulation, such as traditional command and control regulation, may be applied to prevent economic crises (Tarullo, 2019). Indeed, the US -

more focussed on such prevention - demonstrated significantly more proxies for traditional regulation than the other markets. On the other hand, traditional regulation is known to limit innovation. Alternative strategies tend to have significantly less limitations for innovation (Sinclair, 1997; Wiener, 2004). Regulators that put more emphasis on innovation may therefore end up with more alternative strategies, while regulators more concerned with instilling confidence and protecting the economy are expected to prefer traditional strategies.

New or old framework?

The second field of tension, whether or not to design a new regulatory framework for crypto assets, contains institutional and crypto-specific elements. The characteristics of crypto assets, such as decentralization, are the same all over the world. After all, crypto assets are not limited to a specific geographic area (Hughes, 2017). What differs from market to market is the degree to which these characteristics are deemed important enough to depart from historical courses and introduce new frameworks, which may lead to new regulatory strategies.
The exact historical institutional context may differ per market as well. After all, different types of investor protection regulation for traditional assets exist (La Porta et al., 2000). If regulators already applied different strategies, even the same preference for path-dependency over context can lead to different outcomes.

Again, comparing different markets best demonstrates how preferences regarding this tension can explain regulatory strategies. After all, the US data contained more indicators of path-dependency than reference to crypto specific characteristics as explanation for regulation. They apply a lot of command and control regulation, despite the fact that such regulation is problematic for decentralized assets (Cumming et al., 2019). Moreover, scholars have accused US regulators of a tendency towards over-regulation (Bardach & Kagan, 2002). Expanding the scope of rules and regulations further than others would deem necessary is part of this accusation (Bardach & Kagan, 2002). US regulators sticking to that attitude could potentially explain why they incorporate crypto assets in existing regulation to a larger degree than the other regulators.

In the EU, on the other hand, there were zero indicators of path-dependency. However, some reference to the specific characteristics of crypto assets did exist. It comes as no surprise then, that they announced the preparation of a completely new regulatory framework for crypto assets (the aforementioned MiCA legislation). Australian data contained significantly more mention of the unique characteristics of crypto assets than proxies for path-dependency. Similar to the EU, Australian regulators mention future regulatory developments that depend on the context of the crypto sector:

“At ASIC we are also aware that the precise legal and regulatory status is still evolving as the sector itself evolves.” (ASIC, 2021a)

In order to definitively answer what regulatory strategies result from prioritizing dealing with the characteristics of crypto assets, the content of the future regulatory frameworks of the EU and

Australia are needed. As described in this chapter, both markets currently have information and education as their dominant strategy. If this is the result of focussing on the specifics of crypto assets, then it would be in line with my expectations. In chapter two I outlined that I expected to see this strategy play a major role, specifically because of the characteristics of crypto assets.

All things considered, it thus seems like the dilemma of sticking to experience and existing legislation versus prioritizing the specific context of crypto assets - at least to some degree - explains regulatory strategies found in investor protection for crypto assets.

Insights summarized

While the literature was successful in predicting economic and institutional factors as potential explanations for regulatory strategies, it did not outline how exactly this explanation would work (Baldwin et al., 2011). More importantly, the public administration literature failed to predict the significance of additional, contextual factors in explaining regulation. In this case, the characteristics of crypto assets play an important role in the explanation of regulatory strategies for investor protection regulation. A stronger emphasis on context, especially in complex cases with technological innovation, seems to be required.

The two fields of tension seem to have explanatory value for the regulatory strategies adopted for investor protection for crypto assets. This insight leads to two reflections on the literature on regulatory strategies. First, the descriptions of different economic factors and their links to opposing regulatory strategies, including the works of Hahn and Stavins (1991), Wiener (2004) and Tarullo (2019), seem to be accurate and play a significant role in explaining investor protection regulation for crypto assets. Second, the literature fails to acknowledge the importance of the context of the sector in explaining regulatory strategies (Baldwin et al., 2011). This is at least the case for crypto asset regulation, but may perhaps be representative for sectors with new and unique technological aspects in general. Nonetheless, the insights regarding explaining the regulatory strategies are preliminary insights, better thought of as a set of informed hypotheses than complete overview of explanations for regulatory strategies.[9]

[9] A further elaboration on the limitations of the results can be found in the discussion section.

5. Conclusion and discussion

Conclusion

This research was conducted to investigate how the substantial theoretical knowledge on regulatory strategies, investor protection regulation and factors that explain regulation relates to the specific context of crypto assets. The aim was to describe the regulatory strategies found in investor protection regulation for crypto assets and subsequently explain these strategies.

The three most common strategies recognized in investor protection regulation for crypto assets were command and control, information and education and no intervention. Differences between markets were found as well. Most notably, the US had a stronger emphasis on command and control while the other markets contained relatively more indicators of information and education. Despite open coding and actively looking for surprising results, the most common strategies were all ones that were described in the literature. Nevertheless, some of the other codes found in the data did not match the theory. Inter-institutional cooperation, for example, could not be linked to one of the strategies as described in the public administration literature. Therefore, while the literature on regulatory strategies describes the most common strategies, there are some nuances that one might have ignored when merely focussing on the literature.

When it comes to explaining the strategies found, three explanations were most present in the data: economic factors, institutional factors and the characteristics of crypto assets. While economic and institutional factors are well covered by the theory on explaining regulation, the literature failed to underscore the importance of context. After all, the specific characteristics of crypto assets led some regulators to deviate from their historical path and regulatory framework. Upon further analysis, two fields of tension seemed especially relevant in explaining different choices regulators made regarding regulatory strategies: conflicting ideas of what drives the economy and applying an old or new regulatory framework.

Regulators that put more emphasis on innovation may predominantly end up with alternative strategies, while regulators more concerned with instilling confidence and protecting the economy are expected to prefer traditional strategies.

Institutional factors such as path-dependency could explain the choice for applying pre-existing strategies to crypto assets. Yet, the characteristics of crypto assets seem to drive some regulators to work on new regulatory frameworks and depart from traditional approaches. Although these new regulatory frameworks are currently being developed, they could include a large degree of information and education if current publications are any prediction.

It would be too premature to conclude that preferences regarding the two fields of tension are the dominant or only relevant explanations for regulatory strategies regarding investor protection regulation for crypto assets. Nevertheless, they do provide a plausible explanation, as outlined in the previous chapter.

Discussion of findings

The findings are largely, but not fully in line with expectations. I expected to find a combination of different strategies, since this was common according to literature on regulatory strategies (Sinclair, 1997; May, 2007; Baldwin et al., 2011; Braithwaite, 2017). The findings indeed point to combinations, as indicators of multiple strategies were found in each market. Furthermore, I correctly anticipated a major role for information and education. However, I also predicted some degree of self-regulation. In practice this turned out to be limited, especially outside of the US. The expectation of finding both alternative and traditional regulation for economic reasons turned out to be correct as well. Still, I did not expect the goal of increasing trust to play a role in adopting traditional regulation, besides concern over stability of the financial system. As expected, finding cultural explanations in the data proved problematic.

Not all expectations were matched by the findings. Institutional factors were expected to be the dominant explanation for regulatory strategies. While they were indeed one of the important factors in explaining regulation, I underestimated the significance of economic factors. Despite mentioning the potential issues of regulating crypto, I was surprised by the impact that the characteristics of crypto assets seem to have on regulatory strategies. Scholar warned of the difficulties in regulating crypto assets for reasons such as decentralization (Hughes, 2017; Yeoh, 2017; Kim et al., 2018). Regulators recognize these difficulties and some, notably in the EU and Australia, are designing new frameworks in order to address them.

Certain differences in regulatory strategies between the different markets can not be explained by information found in the data. This does not mean that no explanation exists for these differences. Suggestions for the findings can be found in the literature. For example, the US demonstrated more indicators of self-regulation than the other markets. Voter democracies have a tendency towards self-rule (Hendriks, 2010). The US is the most obvious example of a voter democracy in our time (Hendriks, 2010). This might explain why there were more indicators of self-regulation there than in the other markets.

As outlined in chapter four, a lack of regulation can sometimes be temporary instead of a deliberate choice by regulators. While regulators prepare regulation, crypto assets may remain unregulated for a period of time. Lack of regulation does not necessarily mean that regulators prefer to adopt a no intervention strategy for investor protection for crypto assets. Nonetheless, some regulators might prefer this strategy, either for practical or innovation related arguments. It is hard to differentiate between temporary lack of regulation and deliberate lack of regulation. The level of investor protection regulation for crypto assets in the future may point out to what degree a no intervention strategy was merely a symptom of regulators needing time to update their regulatory framework.

What are some of the takeaways of this research for scholars and for society as a whole? This research provides insights into choices by other regulators. Since different ideas of what benefits the economy justify different regulatory strategies, regulators being aware of the alternative reasoning may lead to a more nuanced approach. Individual investors should be

aware that crypto assets currently remain unregulated to a large degree, in terms of investor protection, as represented by the frequency of no intervention indicators. However, future regulation might change that.

As stated in the first chapter of this thesis, research on the application of different strategies to the context of investor protection regulation for crypto assets could add to the theoretical understanding of regulating in cases of technological innovation or in the absence of entities to regulate. While much of the public administration literature is still recognized in the case of investor protection regulation for crypto assets, there were several surprising findings as well. The most significant one is the size of the role that characteristics of crypto assets play in determining regulatory strategies. This a finding that could be relevant for regulating other phenomena with specific new technological innovations as well.

Discussion of methods

One of the reasons for conducting this research was the fact that existing research on investor protection for crypto assets focuses on the US and the SEC (Hughes, 2017; Cumming et al., 2019). During the data selection process it became clear that the SEC publishes significantly more information on the topic than their international counterparts. This wider availability of data potentially explains the focus in academic literature in the US. Furthermore, the differences in availability led to difficult choices in the methodology section. Selecting an equal amount of data per market or even per regulatory actor would significantly reduce the amount of data, to the point where a substantial amount of relevant data would have been ignored. The choice for a more proportionate sample per market has prevented this, but has led to a relatively large role for data from the US. Nonetheless, the majority of the data (19 out of 35 documents and 113 out of 210 segments of text) represented other markets. Besides, differences between the US and other markets were found. For those reasons, I believe that the research still represents a valuable addition to the literature.

Although this research has led to a number of valuable insights, there are limitations to the data. Documents from the US, Australia and the UK include a number of speeches, whereas EU publications do not include speeches. This makes comparison between different regulators less than ideal, as the type of publication can be (part of) what determines the contents of said publication.

Another potential limitation relates to explaining strategies. Since the data did not cover factors such as cultural preferences and democratic systems, there were no insights regarding the explanatory power of these factors. That risks making this thesis somewhat biased towards explanations that are more likely to be found in regulator documents. In order to compare regulatory strategies to the other potential explanatory variables, sets of data regarding cultural preferences and democratic systems should be included in the methodology of a study.

For the strategies and factors that I *was* able to find through document analysis, there are several indicators of a high reliability. First of all, regarding the coding, a second coder re-coded

a sample of the data and came to very similar results. Second, I contacted a number of financial journalists and asked them about relevant actors and developments in crypto regulation. Their answers confirmed the relevance of actors such as ESMA and the FCA for investor protection, as well as the relevance of the MiCA legislation that is being developed in the EU (P. Brasser, personal communication, May 27, 2022; P. Kort, personal communication, May 31, 2022; Anonymous financial journalist, personal communication, June 9, 2022).

Recommendations for further research

This thesis constitutes an initial inventorisation of investor protection regulation for crypto assets across different markets. As regulators continue to adapt to the new phenomenon of crypto asset speculation or investment, regulation will evolve. Further research is required to update the preliminary insights provided in chapters four and five.

In a surprising turn of events, some documents that came up for relevant keywords did not concern investor protection for those who invest in crypto assets, but mentioned crypto technology *as a means to ensure investor protection* through smart contracts and disclosure. Future research into that phenomenon may link the concepts used in this thesis in a completely different way, which in turn could lead to relevant policy options for policymakers. Perhaps the technology itself can be utilized to address the very issues that come with it.

Finally, further research should be conducted in order to specifically test to what extent (choices regarding) the fields of tension explain the regulatory strategies. Preferably such research goes beyond document analysis and includes interviews with insiders, in order to better understand the dynamics of adopting regulatory strategies and to incorporate implicit, unofficial or controversial explanations.

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