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Abstract

This paper analyzes the financial regulatory structures of the US, the EU and several other countries from the point of view of information-flow. Two central discussions regarding regulation of the financial sector have been developing simultaneously: one regards the role of financial regulators in crisis prevention and mitigation, the other considers the efficiency of a consolidated versus a fragmented regulatory structure. Within these debates, operational problems have been largely ignored. Economists have traditionally approached the optimal structure of financial supervision from a public choice angle, focusing on different types of inefficiencies, including agency problems, capture of the financial regulator, monitoring, and self-interested regulators. These valuable perspectives sidestep an equally important public administration problem, namely the problem of information-flow in and among the financial regulatory authorities. This paper aims to fill in this gap by highlighting the operational side of information-flow, which should be taken into account ahead of any change in the structure of a country's financial supervisory structure. The novelty of this paper is that it approaches the optimal structure for financial regulators issue from the standpoint of organizational design and information-flow.

The first sections of this paper lay down a theoretical framework which is then used in the following sections to analyze the financial regulatory structures in the US (federal level) and the EU, compare them to each other and to those of Israel, the UK and Switzerland, and offer suggestions for improvement of those structures from the perspective of information-flow.

The main conclusion of this paper is that in the field of financial regulation, a reasonably fragmented regulatory structure is better equipped to facilitate the information-flow needed in order to prevent and stop a financial crisis from occurring.
1. INTRODUCTION

“Paul Volcker, former head of the Federal Reserve, has issued a radical call for the US to follow the UK’s lead by streamlining its mishmash of financial watchdogs in order to close worrisome gaps in regulation.... The UK’s response to the 2007-09 financial crisis put more regulatory power in the hands of the Bank of England and Mr Volcker said the US should do the same by strengthening the Fed and consolidating other regulators. He called for the abolition of one of three main US bank regulators, the Office of the Comptroller of the Currency, and for the merger of two markets regulators — the Securities and Exchange Commission and the Commodity Futures Trading Commission. Arguing that regulators continue to lag behind the growing size and complexity of financial markets, he told a press conference in Washington on Monday: “All the evidence is that the time has come to do something.” ...”

Paul Volcker is not the only one concerned with the US’s Federal financial regulatory system. Following the 2007-09 financial crisis many experts have voiced their concern and said that something must be done. The question is what?

This paper uses analytical tools from the field of institutional design to assess the different existing types of supervisory models, with a focus on the US (federal level) and the EU, and offers various improvements.

The ongoing economic and legal discussions about the role of the financial regulators in crisis prevention and mitigation, and about the efficiency of consolidating them versus leaving them fragmented, concern themselves with a positive analysis of the type of regulation needed. It is fair to say that by and large these discussions tend to ignore operational problems.

For economists working in the field of financial regulation, the question regarding the optimal structure of financial supervision is usually analyzed from the public choice angle, which implies dealing with different types of inefficiencies, such as agency problems, capture of the financial regulator, problems in monitoring, and self-interested regulators.2

All this is true and worthy of discussion, but at the same time there is also a public administration problem, namely the problem of information-flow in and between the financial regulatory authorities, which is currently neglected in this dialogue.

Moreover, the public administration problem may have severe effects on the intensity of the problems raised by the public choice theorists. Imagine an opportunistic agent who exploits wrong or lacking information. In certain situations, the harm that can be caused by this agent is increased. This can have severe effects on the efficiency and credibility of the financial markets which rely on the monitoring and skills of the financial regulators to mitigate the abundance of market failures in this sector.

Financial regulators are expected to provide a cure for the agency and monitoring problems which exist in the financial markets. They are also expected to address issues such as consumer bias, and control the herding phenomenon which may lead to the creation of bubbles.

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or runs on banks. In order to perform these tasks they are heavily reliant on information and on the information-flow inside the regulatory body itself.³

A recent example may be found in the latest financial crisis. This crisis has proven the need for fast flow of relevant information. Many countries undertook drastic measures to try and stop the financial crisis. These measures were based on information derived from the real-time advancement of the financial crisis. The analysis of this information was transferred to the decision makers, who took decisions based on the information they received.⁴

Information is also needed on a day-to-day basis in order to perform the ongoing regulatory task itself. Take for example the reporting requirements from financial institutions. Some of these requirements are technical, i.e. they require financial institutions to report a number of things on a quarterly or yearly basis while others are material, i.e. they require financial institutions to report when a certain event takes place. The logic behind all of these requirements is to provide the regulator with a better understanding of what is going on inside the financial institution which it regulates. Having a better understanding implies being able to tailor the regulator’s response to foreseen problems prior to their occurrence. If the information is wrong or lacking, then the regulatory response will be less than optimal.⁵

As information is such an essential part of regulatory work, it seems that without addressing the organizational issues concerning information–flow, the discussion surrounding the economic and legal analyses of the optimal structure for financial regulators may be missing a crucial factor.

A prime example would be the Central Bank. In many countries the role of bank supervision is consolidated with the role of determining monetary policy, and both roles are held

³ See Shan L. Pan et al., Crisis Response Information Networks, 13 J. ASS’N INFO. SYS. 31 (2012) about the need for information in crisis response.
⁴ Ahuva D. Singer, Uncertain Leadership: The US Regulatory Response to the Global Financial Crisis, in GLOBAL FINANCE IN CRISIS: THE POLITICS OF INTERNATIONAL REGULATORY CHANGE 93 (Eric Helleiner et al. eds., 2010).
⁵ As information is so crucial for the regulatory work, several scholars have engaged in efforts to explore its completeness and others have tried to assess it and to predict what will happen under situations where the information is incomplete. See for example as early as: DAVID P. BARON, HANDBOOK OF INDUSTRIAL ORGANIZATION 1347-1447 (Richard Schmalensee & Robert Willig eds. 1989), Robert Libby et al., Experimental Research in Financial Accounting, 8 Accounting, Organizations and Society 775, 786 (2002) followed by many others including lately Omri Ben-Shahar & Carl E. Schneider, The Failure of Mandated Disclosure, U. PENN. L. REV. 647 (2011) and OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE (2014).
by the central bank. By combining these two functions into one regulator the central bank is provided with a wider spectrum of tools in order to design and control economic policy.

Moreover, studies have shown that confidential information collected through supervision of banks helps improve the conduct of monetary policy.\textsuperscript{6} This is especially true during times of financial crisis when the fast flow of the relevant information is crucial in order to block the crisis. It is precisely for this reason that a discussion of the optimal structure in order to facilitate information-flow is so important.

The problem is not merely academic, since many countries have changed their financial supervisory architecture over the past fifteen years. In their 2009 paper, Masciandaro and Quintyn claim that some of the reforms in the financial supervisory structures in the countries surveyed by them were made based on economic analysis of the markets in each country.\textsuperscript{7} But if those economic analyses did not refer to problems of information-flow, they might have left out a vital variable which could have changed the end result.

The importance of information has not escaped researchers studying how legal institutional structure effects public decision making. These researchers emphasise the importance of “institutional competence”, including access to information, in the allocation of authority among different potential decision makers.\textsuperscript{8}

However, these researchers pay little attention to the question of how information is transmitted inside the institution. They seem to neglect the question of information-flow and assume that certain decision makers must have all the information they need in order to make the decision, simply because they are better situated in the organization. The question of information-flow is left outside the borders of this discussion.

The novelty of this paper is in approaching the issue of the optimal structure for financial regulators from the standpoint of organizational design and information-flow. It aims at pointing out the operational side of information-flow which needs to be taken into account when a country decides to change its financial supervisory structure.


Looking at the question of consolidation versus fragmentation for financial regulators through the lens of information-flow provides us with an intuition as to which type of structure would work best in facilitating information-flow.

As will be discussed by this paper, it seems that due to the importance of diversity in collecting information, and due to the fact that it removes at least one layer of supervisor – subordinate relationship, and thus contributes to a less rigid structure and less dilution of information, it is advisable from an information-flow perspective to adopt the fragmented regulatory model. At the same time it is important to make sure that all the regulatory institutions share the same physical compound, and that informal interactions between workers from different regulatory institutions and departments are enhanced to the maximum. The reasons for these recommendations will be discussed in detail in this paper.

Having said that, it should be highlighted that all models will probably fail at some point, and so a reasonable goal should be to minimize the number of times such failures occur, while knowing that complete prevention of such failures is very rare. The fact that the fragmented regulatory model has failed a few times in the past does not mean that it is not the most efficient model, but rather that, like any model, it is also vulnerable to unexpected market failures and the forces of change.

Basically, this paper lays down the theoretical framework for evaluating and testing the efficiency of the existing supervisory models in transferring information. However, this paper does not test the suggested framework empirically. Room for empiric research is still left using the general framework proposed by this paper.

Another issue which is left outside the scope of this paper is the issue of information-gathering. This paper refers to the problem of information-flow assuming the right kind of information was gathered and processed.

Last, is worth mentioning that this paper discusses the pros and cons of the consolidated versus the fragmented structure in general. In the last section this paper briefly discusses the application of the general discussion to the existing financial regulatory structures of several jurisdictions. However, it is important to stress out front that the main contribution of this paper is to lay down the theoretical framework in light of which the existing supervisory structures can be tested, it does not aim to commence in an in depth analysis of any specific regulatory context.
nor does it attempt to engage in a detailed analysis of the legal framework underpinning the financial regulatory structure in any given jurisdiction.

This paper is organized as follows: following this introduction, section two describes the link between organizational structure and information-flow as presented in the literature pertaining to information-flow, and lays down the theoretical framework which will be used in the following sections to analyze the financial regulatory structures. Due to the fact that financial regulators are public entities, section three examines the differences between public and private sector firms, as these differences have an effect on information-flow and organizational design. Section four describes how information flows inside organizations. This section is divided into a discussion of how information flows within a consolidated pyramid structured entity and how information flows between fragmented entities. The last section of this paper examines the federal financial regulatory structures in the US and the EU, compares them to one another and to the structures of the financial regulators in Israel, the U.K. and Switzerland, and offers various improvements based on the previous sections.
2. THE LINK BETWEEN ORGANIZATIONAL STRUCTURE AND INFORMATION-FLOW

Several scholars have acknowledged the effects of the organizational structure on information-gathering and flow. As decisions are based on information, the link between structure and flow has a direct effect on the decision making process.

Moreover, past research has argued that as much as 80% of organizational knowledge is contained within people’s heads, 16% is kept as unstructured data and 4% is organized, structured and stored. If that is indeed the case, the need for an organizational structure for financial regulators which will provide good information-flow and knowledge-sharing is imperative as this information cannot be obtained in any other way other than by interpersonal communication.

This sub-chapter aims to provide an overview of some of the existing literature on organizational structure and its impact on information-flow. By doing so it will also create a framework through which the different structures of financial regulators can be analyzed and evaluated.

In his 2005 article, Rudalevige refers to the information which is needed by the president of the US in order to make decisions. His conclusions are that a functionally based structure will provide the president with more useful information than a policy-specific structure. Meaning, a structure which supplies the president with expert opinion on technical issues (such as “legislative policy formulation”) is more valuable for the decision making process than a structure which separates policy from specialization (such as “foreign or domestic”). Furthermore, multiple sources of competing information will give a wider view than a single source of information.

These findings also seem to be applicable to the discussion of information-flow in the different structures of financial regulators; Choosing a structure for financial regulators which ties together policy and specialization, for example a regulatory department which specializes in disclosure rules and also has the power to enact the relevant regulation with regards to disclosure, is more beneficial than choosing a structure which separates them, such as a

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10 Bell, supra note 9.
12 Id., at 335.
13 Id., at 335-336.
regulatory department with specialization in disclosure rules which provides the information to the rule making department in the financial regulator. Choosing a structure which ties policy and specialization is beneficial for taking the right regulatory decision and minimizing information gaps.

Furthermore, a structure which allows multiple sources of competing information to reach the hands of the decision maker in the financial regulatory body is preferable to a structure which does not.

Duncan approached the issue of organizational design from a different angle. In his article he analyses different types of organizational structures in order to decide which of them is best suited to different environments. He provides us with tools in order to try and adjust the structure to the environment. Derived from Duncan’s findings, a less rigid regulatory structure, (one in which employees from all levels of the organization take a greater part in the decision making process), would be beneficial over a rigid one (where management keeps tight control and does not delegate assignments which involve discretion to other employees), in a regulatory sphere characterized by a high degree of uncertainty, i.e. where the demand for information is great.

Furthermore, a structure which enables and encourages cooperation between different regulatory departments and between different regulatory institutions is beneficial to a structure which inhibits cooperation.

In her 1987 article, Weiss used a study conducted on the schooling system in the US to try and answer the question - what pushes government authorities to cooperate? She found that cooperation is mainly induced by an external demand for cooperation, such as a law demanding cooperation or public opinion which pushes the authorities to cooperate. Weiss (1987) did not discuss the issue of distinct categorical institutional structures and did not suggest that one structure is preferable to others. She was more concerned with the question of what makes authorities cooperate. Even so, as information-flow is highly dependent on information-sharing and cooperation, her findings too point in the direction of increased cooperation, i.e., a structure which best facilitates cooperation will also facilitate information-sharing.

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15 Id., at 60.
16 Id., at 60.
Information-sharing within organizations depends on a number of factors which include employee motivation, organizational culture, structure, and how power is divided between employees.\textsuperscript{18}

Individuals may contribute or share knowledge within an organization in one of four ways;\textsuperscript{19} feeding the knowledge into a database; formal obligatory interactions dedicated to sharing knowledge; informal interactions which lead to sharing knowledge; and sharing knowledge within designated forums created in order to share and disperse information, such as creating social forums within the organization which are not obligatory, for example a forum for environmental protection which employees can choose whether to attend or not.

Out of the four ways which have been identified, the greatest amount of information is usually transmitted during informal gatherings of employees, even though great efforts and resources are invested in order to facilitate formal ways for information-transfer in and between organizations.\textsuperscript{20}

Social networks further increase the capabilities of employees to share knowledge, i.e. employees who belong to the same social network or the same voluntary forums will tend to exchange more work-related information between each other, relative to the amount of information they exchange with people who do not belong to the same social network or forum.\textsuperscript{21}

Moreover, Kim et al. have found that knowledge-sharing is a dynamic learning process which occurs between employees, customers, and suppliers, and which is positively correlated to clear organizational goals.\textsuperscript{22}

From that we can deduce that an organizational structure which increases informal interactions between employees and which sets clear organizational goals should be preferred over any other structure.

When we talk about financial regulation, given the fact that the collected information is collected and processed with coordination in line with the organizational goals of the financial


\textsuperscript{22} Kim & Lee, \textit{supra} note 21, at 373.
regulator, it is important to define the goal of the organization and to make it as clear as possible for the employees of the regulatory body. Defining the organizational goals helps determine the type of information which will be collected and processed by the employees of the regulatory body and so helps focus the regulatory work and cuts down on irrelevant information.

Another important point for information-flow considerations is the physical layout of the office. Studies have proven that the physical layout, also known as the “microgeography” of the office, matters. Scholars from Caplow to Hall and Tolbert stress that in order to increase information-sharing in and between organizations, the physical distance between employees should be brought down to a minimum and informal interactions should be increased.

From this we can conclude that a structure which allows more face-to-face interaction between employees should be preferred to one that isolates them from one another.

Last, another aspect of information which is directly linked to information-flow is information-gathering. It is the source of the information that flows, and without the collection of the right kind of information, there is no information-flow to discuss. Stephenson referred to this issue and pointed out that agents’ incentives to collect and analyze data depends on the institutional design and environment. He further states that information may help reach better decisions, but it is costly. It costs the information-collecting agent time, resources, and effort to collect it. That is why the collection of information should be encouraged through incentives.

Following Stigler, Stephenson stresses that from a social welfare point of view, research should be conducted until the point where the marginal benefits from acquiring the information is equal to the marginal costs of finding it. However, the problem is that these social marginal benefits and costs do not always correlate with the personal marginal benefits and costs of the

23 A recent example may be taken from the Israeli central bank; the Israeli government has realized the importance of defining clear goals for the regulatory work of its central bank, which is also the supervisor of banks in Israel, and has enacted a new law, The Bank of Israel Law of 2010, replacing the former one from 1954. Section 3 of the new law defines the goals of the central bank as follows: maintaining price stability; supporting economic policies of the government such as growth, employment, and the narrowing of social gaps, and; insuring the stability and accountability of the financial system as a whole. (The Bank of Israel Law, 5770 - 2010, SH No. 2237 p. 452 (Sec.3 A) (Isr.)).


26 As early as Caplow, supra note 24 followed also by Hall & Tolbert, supra note 25.

27 Stephenson, supra note 8, at 1430-31.
information-collecting agents. This will lead to a ‘socially suboptimal investment in information’ (p. 1431).

He further points out that, although theoretically one could imagine that an information collector would over-collect information, there are a few very good reasons to think that in most cases he will under-collect information. A major reason is that most of the costs are borne by the information collector, while the benefits are shared among society as a whole. This reduces the incentives to collect information and might create problems in cases where society prefers the decision maker to make a slightly better decision, but it comes with a great personal cost of information search. Another reason might be a collective action problem which may develop when a number of different agents are responsible for information–gathering. The problems of collective action and underinvestment in collecting the information are dependent on the number of information collecting agents. The more fragmented the regulatory system, the likelier it is that such problems will occur. Over-fragmentation should therefore be avoided, and the number of regulatory authorities should be kept reasonable.

As mentioned in the introduction, this paper refers to the problem of information-flow assuming the right kind of information was gathered and processed. It does however make use of Stephenson’s analysis with regards to how agents think when encountering a strategic situation which relates to information. While Stephenson is occupied with information collection incentives, this paper focuses on information-sharing problems inside financial regulators which are government institutions.

To sum up the points brought up by the above-mentioned literature, when choosing between two different types of organizational structures for financial regulators, and if the main consideration is to increase information-flow, the following framework is the recommended one:

- Where possible, vote for a structure which ties policy and specialization together, for example, a structure in which a supervisory department consists of specialists such as economists, lawyers etc. which also has the ability to enact regulation, rather than a structure in which specialists perform research and pass the research on to a department which has the power to determine policy and enact regulation.

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28 Stephenson, supra note 8, at 1431. See also articles referring to the “search theory” as early as: George J. Stigler, *Information in the Labor Market*, 70 J. POL. ECON. 94 (1962).

29 Stephenson, supra note 8, at 1432.
- Where possible, allow multiple sources of competing information to reach the hands of the decision maker. This point stresses the fact that a diversified regulatory structure is preferable to a consolidated structure, as a diversified model contains more competing sources of information than a consolidated one.

- A less rigid and hierarchical regulatory structure would be beneficial over a rigid one. As discussed in this paper, a fragmented financial regulatory structure is beneficial to a consolidated one, as it removes at least one layer of manager–employee relationship - the last one before the top - thus making the structure less rigid.

- A structure which enables and encourages cooperation is more beneficial than a structure which inhibits cooperation. In the context of financial regulation, having more joint meetings, forums and social networks in and between the different regulators, and forming platforms such as joint agreements for cooperation and Memorandums of Understanding between different financial regulatory authorities, is beneficial for information-flow and should be encouraged.

- An organizational structure which increases informal interactions between employees and which sets clear organizational goals should be preferred over any other structure. For information-flow purposes, it is beneficial to have the goals of the financial regulatory body described in the establishing laws.30

- An organizational structure which allows more face-to-face interaction between employees should be preferred to one that isolates them from one another.

- When choosing a fragmented regulatory structure, it is advisable to choose a structure that does not over-fragment the market. For example, division of regulatory powers between a banking supervisor, an insurance supervisor and a markets supervisor is preferable, from an information-flow perspective, to a structure in which the banking supervisory function is further divided into several regulators.

30 See the example of the Bank of Israel mentioned above.
Based on the recommended framework, an analysis of the existing financial supervisory structures can be made. However, prior to performing such analysis we should find out whether the fact that financial regulators are governmental institutions impacts our analysis.

There is reason to believe that information-sharing inside government organizations will differ from information-sharing within private sector firms. Private sector firms differ from public organizations in a number of aspects which affect problems of information-flow. Basically, these differences make it more difficult for information to flow within and between public organizations as opposed to private sector firms.

These differences further highlight the increased need for coordination and cooperation inside and between the different financial regulators, and further stress the importance of choosing the right structure for improving information-flow. These differences will now be discussed in greater detail.
3. THE DIFFERENCES BETWEEN PUBLIC INSTITUTIONS AND PRIVATE SECTOR FIRMS

The distinction between the private and public sectors has often been discussed in the academic literature on public administration. However, most articles in this field refer to public utilities while only a minority of articles touch on public institutions providing other types of services, such as regulators or ministries. Financial regulators belong to the latter group; they are service-granting public institutions which do not provide society with public utility services.

Given the scarcity of articles referring to the differences between private sector firms and regulatory institutions, some insights can be drawn from the literature comparing private sector firms to firms supplying public utilities. These insights will be adjusted, where needed, to fit financial regulatory institutions and enable a better assessment of the existing financial supervisory models.

Unless stated otherwise, the differences between public institutions and private sector firms highlighted in the following pages are also applicable to financial regulatory institutions.

Scholars agree that the main difference between public institutions and private sector firms relates to ownership; public institutions are held by the government as opposed to private sector firms which are held by shareholders or entrepreneurs.

This difference yields two immediate results - the way the firms are financed, and the way in which the firms are controlled. Private sector firms are financed through revenues paid by their consumers, by credit which they borrow from banks, or by stocks they issue on the stock market, whereas public institutions are funded mainly from tax payers’ money. The second factor, the control, refers to the fact that private sector firms are controlled by market forces, i.e. supply and demand, as opposed to public institutions which are controlled by political powers and pressures. That is especially true when the public institutions are not financially independent from government, i.e. when their budgets depend on government decisions, which is

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32 Research addressing institutional issues relating to non-public utilities companies include: Rudalevige, supra note 11, at 335-36 and Stephenson, supra note 8, at 1432.
34 See: Boyne, supra note 31, at 98; Andrews et al., supra note 31, at i301-i319.
35 As early as: GARY L. WALMSLEY & MAYER N. ZALD, THE POLITICAL ECONOMY OF PUBLIC ORGANIZATION (1973); followed also by: Andrews et al., supra note 31, at i302 and Boyne, supra note 31, at 98.
36 Boyne, supra note 31, at 98 followed by Andrews et al., supra note 31, at i302.
the case for many financial regulatory bodies around the world. In such cases, the public institutions may be subject to political pressure which might undermine their professional judgment and lead to suboptimal decision-making.

These three main differences, i.e. the identity of the controller, the way in which the legal entity is financed, and the way in which it is controlled, have an effect on the organizational behavior of the entity.

This goes back to the theory of the firm and to incentives to monitor; dispersed ownership, in this context being owned by the government, leads to lower efficiency in the public sector. The reason behind this phenomenon is an incentives problem; in contrast to private sector firms which are supposed to maximize their shareholders’ profits, in the public sector no individual voter will directly gain from a more efficient organizational design for public institutions. This causes a difference in the amount of monitoring in each type of entity; in a private sector firm the shareholders are incentivized to monitor the managers and provide them with incentive schemes which will increase shareholders’ profits. This in turn provides a drive for innovation and efficiency as the manager’s salary is often tied to the company’s performance either through shares or through remuneration programs and bonuses. In contrast, when it comes to public institutions, managers do not usually get an increase in their salary if they opt for a better organizational design. As monitoring, or lack of, does not directly influence any particular individual, it becomes a ‘public good’ – very few people are induced to take part in the monitoring of a public agency as their efforts will very likely exceed their gains.

Even though financial regulatory agencies don’t produce tangible assets, problems can and do exist in monitoring financial regulators. First, monitoring financial products is a complicated task which requires expertise. Derived from that, monitoring of financial

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37 Information on how different regulators are funded in different countries may be found at the following report: The Group of Thirty, The Structure of Financial Supervision: Approaches and Challenges in a Global Marketplace 23 (2008).
38 Boyne, supra note 31, at 98; Kim & Lee, supra note 21, at 370-85; Barry Bozeman, All Organizations Are Public (1987).
40 Boyne, supra note 31, at 99.
41 Id., at 99.
regulation requires expertise and understanding both of the problems and of the solutions suggested by the regulator. Very few people have the expertise and knowledge to assess the regulatory work. Second, very much like the consumers serviced by a public utility firm, each individual consumer of the financial regulatory services gains nothing directly from a more efficient design for financial regulators, and so does not have the right incentives to push for a better designed regulator.

Problems with monitoring in the public sector might also induce the problem of a captured agent. Where monitoring is lacking it is easier for the public official to consider his own utility function and be tempted by lucrative suggestions from the industry in exchange for helping with favors in the area he is in charge of. A captured public official will act for the benefit of the group which has captured him, rather than in accordance with the good of the public in general. 43 This might include keeping information to himself or spreading partial information in order to tilt the end decision in the direction which is beneficial to the regulated firms.

Another problem which is related to political as opposed to economic control is that of multiple sources of authority. 44 Multiple sources of authority become a problem when those who have the authority contradict each other. It is very likely that in order to mitigate this problem, public institutions will develop complex bureaucratic mechanisms to make sure that all those who have the authority are satisfied. This of course has a direct effect on information-flow, as information-flow is made more complex.

According to Boyne (2002), the three distinctions between public institutions and private sector firms are not just conceptual but also empirical. The empirical evidence on this issue suggests that they are not perfect proxies for each other. This implies that all three differences - ownership, funding, and control - should be taken into account when evaluating the effects of being a public sector institution. 45
However, Knowledge-sharing is important both in the public and the private sector. Researchers have found that organizations which transfer knowledge efficiently are more productive than ones which do not.46

For private sector firms, information-flow is essential in order to meet consumer demands and remain competitive. Even though public sector institutions are not subject to competitive market forces, knowledge-sharing is important for them as well. In the public sector there is a growing focus on result-oriented services and performance. These require greater information and knowledge-sharing capabilities.47

As the world becomes more complex, cooperation between different government institutions is needed. In order to do so, government institutions need to share their knowledge with one another.48 As Nonaka (1994) noted, it is the individuals within the organization who are collectively responsible for the creation and management of organizational knowledge and know–how.49 Therefore it is important to identify the optimal environment for enhancing employee knowledge-sharing capabilities.

Capabilities of knowledge-sharing with other institutions are also significant as they are often essential for the work of the institutions. Hence the importance of the discussion regarding the optimal structure for facilitating information-flow. These issues are at the heart of this paper and are the focus of discussion in the following pages.

46 Kim & Lee, supra note 21, at 370-385.
47 Kim & Lee, supra note 21, at 370-385.
4. The Story of Information-Flow

Decisions are made based on information sourced from employees. In order to understand the work of an organization it is critical to understand what kind of information reaches the person or persons in charge of making the decisions.50

Institutions are important for decision making as they help provide a set of rules for the interaction of employees, and by doing so provide them with an idea of the behavior they should expect from one another. This helps to mitigate the uncertainty inherent in strategic interactions, and provides the employees with some sort of commitment mechanisms which helps reduce information search costs.51 Institutions might also have a slight superiority with regards to maintaining and storing of information.

The organizational structure affects the type of information that flows to the top and on which decisions are made. Therefore a prior decision must be made about how to structure the organization so that the right kind of information reaches those who have the power to make a decision.52

When we talk about information-flow and about possible problems with information-flow, we refer mainly to information which is analyzed and brought in an analyzed form to the decision maker, i.e., more complex information. There are other types of information such as statistics and data which are less vulnerable to being changed while traversing the different levels of management in the organization which lie beneath the decision maker.

When we think of information-flow inside financial regulators it is crucial that the right kind of information will reach the decision maker in the shortest time possible.

There are a few attributes which separate information in general from “the right kind of information”. Such attributes include the following: (a) the information is useful in the sense that it fits with real world problems; (b) it is comprehensive, meaning that it includes all plausible options and an estimation of the probability of their occurrence and; (c) it is diverse, i.e., different types of information which may lead to different end results reach the decision maker and enable him to see the whole picture and take a decision while being aware of all options.53

50 Rudalevige, supra note 11, at 336.
51 Id., at 338.
52 Id., at 338.
53 Id., at 346.
The literature suggests two ways of obtaining the right kind of information: choosing the right kind of employees, i.e., choosing agents who share the same views, values, and beliefs on the world as the principal in order to minimize the agency problem in collecting information; and choosing the right kind of structure. This paper focuses on the latter, the reason being that financial regulators are public sector institutions. In public sector institutions it is difficult to change the employees. It is also difficult to change the personal attributes of the existing employees in order to make them more adept at information-gathering and sharing. It is much easier to change the organizational structure to a structure which facilitates better information-flow.

The current financial regulatory structures that exist in the world can broadly be divided into two types of organizational design: a pyramid hierarchal structure, or a fragmented one.

In order to understand how to structure an organization, two things need to be taken into account: what does the person at the top need to know; and, derived from that, how should the organization be structured?

It is important to keep in mind that there is no flawless structure; all structures might fail at some point. The trick is to try and reduce the costs and the frequency of such failures.

When we talk of financial regulators, it is clear that both structures, the consolidated and the fragmented one, have their pros and cons when it comes to information-flow. However, based on the organizational design literature and on the propositions mentioned earlier in this paper, there seems to be reason to believe that the fragmented structure is better suited to information-flow than the consolidated one. The reason for believing so will now be discussed in detail.

55 Bozeman, supra note 38, see in general chapter 2, at 14-28.
56 Rudalevige, supra note 11, at 339.
4.1 The consolidated financial regulatory structure

When we think of a consolidated financial regulator, such as the UK Financial Service Authority in its pre-2007 Financial Crisis structure, or the current structure of FINMA, the Swiss financial regulator, we think of a pyramid shaped hierarchical structure.

Such hierarchical structure has its merits; it eliminates the option for overlapping regulation, it resolves the problem of gray zones, and it enables smoother and more frequent communication and interaction between the different departments of the financial regulator, as it increases the encounters between employees of different departments.

As Bozeman et al. (1978) put it: ‘Physical layout is important because communication declines rapidly with the distance between people’57 (p. 393). Therefore, it is suggested that physical interaction between employees increases the sharing of information and should be encouraged.

Having said that, the hierarchical pyramid structure also has its down-side when it comes to information-flow; the problem with this structure is that information gets diluted as it flows upwards.

Each level of employees takes out what seems to be unnecessary information, and this selective processing of the information changes the information as it moves up the ladder. By the time it reaches the top the individuals at the top might not have enough relevant information to take an informed decision in times of uncertainty.58

The information which will reach the top depends greatly on what information has been passed up in each level. In the words of Rudalevige (2005, p.338), “The sea of information at the bottom of any hierarchical pyramid is reduced to a puddle at the top.”59

This is why having more subordinates participate in the decision making process may generate the right kind of information to deal with uncertainty as there are less screens on the way.60

The notion of staff serving as screens of information is indeed one of the biggest problems with the consolidated model; disagreements among staff are hushed before they reach

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58 Rudalevige, supra note 11, at 341.
59 Id., at 338.
60 Duncan, supra note 14, at 59-80.
the top. In addition, staff may choose to omit information either because they deem it irrelevant or because it might make them look bad.\textsuperscript{61}

This is not to say that screening information has only negative consequences. On the contrary, the phenomenon of diluted information also brings with it a positive effect; the consolidated model provides a wide potential for information-gathering and processing and extraneous data is eliminated during the process. At the end the information that reaches the top is easier to digest.\textsuperscript{62}

As a consequence, in some cases, the pyramid structure makes a lot of sense. However, as there are no guarantees that the information which flows up contains all the important facts in order to reach an informed decision, using this type of structure might be problematic in the area of financial regulation which is heavily dependent on information for crisis prevention and for a well-functioning market.

One of the tasks of the organizational structure is to facilitate the information-flow inside the organization in order to allow for better decision making processes. When an organizational structure is formalized and centralized, information-flow becomes restricted. When this happens the organization is not able to cope well with uncertainty.\textsuperscript{63}

In one of the studies performed on information-flow in different types of companies, some of the companies had what can be described as a steep pyramid or a consolidated structure based on defined divisions with clear responsibility and a high degree of managerial control from the top.\textsuperscript{64} These types of companies displayed the need for high amounts of information which was required by senior management in order to control the company. However, it was found that top down information was very scarce. This created a problem for middle level managers who reported that they felt the need to receive more information from higher management. Access to the high level information was denied to them.\textsuperscript{65}

These findings are backed up by a later study\textsuperscript{66} which concluded that the hierarchal structure of government organizations limits information–sharing, and hinders the information

\textsuperscript{61} Rudalevige, \textit{supra} note 11, at 356.
\textsuperscript{62} \textit{Id.}, at 340.
\textsuperscript{63} Duncan, \textit{supra} note 14, at 60.
\textsuperscript{64} White, \textit{supra} note 18, at 157-170.
\textsuperscript{65} \textit{Id.}, at 169.
flow between employees and between employees and their managers. In the area of financial regulation these findings are alarming.

When we think of a financial regulator which is supposed, to the best of its abilities, to predict and stop a financial crisis before it has occurred, and to mitigate it once it has already started, the lack of sufficient information in the middle level of management could create a serious problem.

It is not easy to obtain and digest the information which helps to predict a financial crisis, as the ability to predict a crisis depends on seeing the broad picture and putting the puzzle together correctly. There is a wide potential to “get it wrong”, and it is necessary that as many employees and mid-level managers as possible are exposed to the relevant information in order to minimize the chances of mistakes. According to White’s (1986) findings, the hierarchical structure does not enable that for middle level management.

Managers in organizations with flatter pyramids report that they are happy with the information they receive. As they have direct personal contact with senior management, they feel they have access to all forms of internal information. Such access is important as access to strategic information and operational data enables managers to respond quickly to any situation.

A financial regulator chooses to act and regulate based on accumulated information. The information must reach a certain level of validity or concern in order to trigger the regulator to act. The more sources of information point at a certain direction, the higher the probability for regulatory action.

Moreover, the larger the number of information sources pointing at the same direction, the higher the chance for a correct regulatory action, i.e. providing the right regulatory “medicine” which solves the market failure in the most efficient way.

As a result, exposing middle and lower level management to the right kind of information is crucial. It seems it is hard to achieve such exposure in the consolidated structure, as that structure is based on tight control which is reflected in the lack of sufficient information flowing from the top down.

67 See Pan et al., supra note 3, at 31-56 about the need for information in crisis response.
68 See id.
69 White, supra note 18, at 169.
70 Id., at 169.
However this is not the only problem with information-flow inside the consolidated model.

It has been found that low formalization, which is usually found in less hierarchal structures, induces innovation and encourages new ideas. Derived from that, a hierarchal consolidated structure is likely to block regulatory innovation. In the area of financial regulation where the industry is constantly coming up with new ideas to bypass the regulation, there is a high need for the regulator to keep up with the industry and be at least as innovative. If the consolidated regulatory model blocks innovation, it might jeopardize the efficiency of the regulation.

Moreover, the organizational structure also affects the amount of knowledge-exchange between departments and between one organization and another. Centralization reduces the initiatives for knowledge-exchange with other units in the organization, whereas an organizational design which promotes flexibility also encourages information-sharing within and between the organization and other organizations. A centralized organizational structure which emphasizes rules, regulations, and strict monitoring, may create barriers to knowledge-sharing within the organization.

These insights bring us to another point relating to information-flow inside the consolidated regulator - the definition of the units which construct it. The definition of units changes the type of information which will flow to the top. There is a difference between receiving information from units that are responsible for different products and receiving information from units that are responsible for different types of financial institutions.

As the person at the top will learn mainly about the disagreements between the units, and as these will depend on the way in which each unit is defined, changing the categories around which choices are made impacts future decisions.

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73 Wenpin Tsai, Social Structure of “Coopetition” within a Multiunit Organization: Coordination, Competition, and Interorganizational Knowledge Sharing, 13 ORG. SCI. 179, 189 (2002).
76 Rudalevige, supra note 11, at 344.
For example, the consolidated financial regulatory model usually contains departments which have certain regulatory responsibilities which are divided among them according to specific segments. If those departments are organized according to a product-base type of model, i.e., different departments regulate different types of financial products, the head of the regulatory authority will receive information regarding a certain set of problems and issues. This set will be very different from the one which would be obtained if those departments are organized according to a firm-based model, i.e., each department regulates a specific type of financial firm. The different nature of problems which reach the top have an effect on the end decision.

It could be argued that both structures should create information-flow to the top, and this would be true to some extent.

However, glancing at reality it seems fair to assume that when departments are organized according to the firm-based regulatory model, more arguments will come up and so more information will float up and reach the head of the authority.

This assumption is based on the fact that financial firms have moved past the clear boundaries of banking, insurance, and securities firms, and are now selling products which cross the boundaries originally set for a specific type of firm. By doing so, it is no longer clear which regulator has the mandate to supervise these financial conglomerates and their activities.

We know from current behavior of financial regulators in the fragmented regulatory models that each of them strives to enlarge his or her mandate for supervision. Therefore we have no reason to believe that supervisors will act otherwise if they become heads of a department in a consolidated regulatory body.

Thus, due to the fact that the supervisory boundaries of the firm-based model are vaguer than those of the product-based model, we can assume that more arguments with regards to which mandate belongs to who will float up to the top if we opt for the firm-based model.

Indeed the current structures of consolidated regulators which exist in the world today are constructed from different departments each in charge of regulating a specific type of financial firm, and are usually divided between banks, insurance companies, and securities market regulation.\footnote{See for example the Swiss supervisory model and the Canadian supervisory model described in the THE GROUP OF THIRTY, \textit{supra} note 37, at 170-73 and at 126-34 respectively.}
Much like the president in Rudalevige’s 2005 example, the head of the regulatory authority will only learn about what crosses the department’s jurisdictions as those border lines are likely to ignite a dispute and these disputes are what flows to the top. As Rudalevige (2005) puts it:

“When the very same people, with the very same preferences, are shifted from a functional to a product line-based decision-making structure, different outcomes occur…” (p. 342).

Essentially, based on everything said so far, we can conclude that information is important and the more information that flows upwards the better. However, forcing large amounts of information up the tube and into the hands of the decision maker who maintains full control over the decisions also has its downside; it may lead to a bottleneck. The decision maker will need to invest a great amount of time in screening the information and managing it.

There is a fine line between encouraging information-flow and overflowing the system. Basically, different positions within an organization are faced with different problems which in turn depend on different types of information for solution. In general, problem-solving is a combination of the right kind of information and personal skills and capabilities.

The problem related to information in organizations is usually not with regards to gathering the information but with regards to processing it. The ability to process large amounts of information goes down the further you move up the hierarchical structure of the organization.

One of the ways to deal with the problem of overflowing the system with knowledge is by picking the right kind of employees. The information which makes it to the top depends on the employees at the bottom. Their judgment colors what they report to the top; this phenomenon may also be referred to as bias omission.

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78 Rudalevige, supra note 11, at 342.
79 Id., at 342.
80 Id., at 340.
81 See generally: White, supra note 18, at 157-170.
In order to solve this problem, regulatory institutions need to try and select smart people who are also highly motivated about their job. The idea being that if employees serve as screens, the better the screen the better the quality of information which will reach the decision maker’s hands.

Therefore we can conclude that the way to increase information-search by government officials is by selecting smarter people or people who care greatly about the public outcome of their decisions. Picking employees who hold similar views to the head of the authority on the world and on problem-solving, is key to solving the problem of “colored” information.

This is also true for financial regulators; the quality of the financial regulatory body’s work depends on the quality of its employees. That is why recruiting the right kind of employees is essential, especially given the problems of firing employees of public institutions that were discussed earlier in this paper. However, the means to recruiting the right kind of employees are beyond the scope of this paper.

A separate issue concerns the possibility of overflowing the system with redundant information. Even though scholars acknowledge the problem of a possible overflow of information, they seem to be more concerned with the lack of information than with overflow of information. They seem to agree that the goal should be to push diversity of opinions up the hierarchical structure and into the hands of the decision makers, as diversity of opinions is essential in order to make a well informed decision.

One way of doing so is indeed to find the right structure for the different departments in the consolidated financial regulator. An alternative, and perhaps better, way is “parallel processing” of information.

Parallel processing means encouraging multiple sources of information. This is indeed the plus side of the fragmented regulatory model which will now be discussed.

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83 Stephenson, supra note 8, at 1434.
84 Id. at 1434.
85 Rudalevige, supra note 11, at 340.
86 See generally: Rudalevige, supra note 11, at 333-360; Stephenson, supra note 8.
87 Rudalevige, supra note 11, at 346.
4.2 The fragmented financial regulatory structure

When speaking of “parallel processing” of information in financial regulatory institutions in its pure form, the fragmented regulatory model comes to mind, i.e., a model containing more than one financial regulator. Such models include the institutional model (regulating according to the type of institution), the functional model (regulating according to the type of product), and the twin-peaks model (one regulator is responsible for consumer protection and the other is responsible for minimizing systemic risks). These three types of regulatory structures are prevalent in most parts of the world.

The reason these financial regulatory models allow for parallel processing of information is due to the fact that some overlapping of regulatory mandates occurs.\(^{88}\)

The big plus of the fragmented model is diversity. As previously mentioned, if a CEO wishes to be well–informed, then the categories on which the firm is structured should cut across the different categories influencing the firm’s environment.\(^{89}\) Fragmenting the financial regulators achieves this outcome based on the fact that in reality financial regulators do have overlapping mandates for supervising parts of the financial conglomerates’ activities or products. Such overlapping mandates cut across different categories of the firm’s activities and so the chances that information is “lost” or unattended to are minimized.

As discussed before, when it comes to the social structure, organizational pyramids should be flattened.

‘One of the best ways to increase horizontal communication is to increase the number of peer relationships while decreasing the number of subordinate-supervisor relationships’.\(^{90}\) (p. 402)

From the point of view of decreasing subordinate-supervisor relationships, structuring financial regulators in a fragmented way, i.e., different regulatory bodies responsible for different supervisory tasks, is better than structuring them in a consolidated pyramid shaped regulator; it

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\(^{88}\) For example, it is not uncommon for the securities regulator to issue regulation which also relates to banks. Sometimes this regulation overlaps that of the banks supervisor.


\(^{90}\) Bozeman, *supra* note 57, at 402.
removes at least one layer of subordinate-supervisor relationship - the last one before the top of the pyramid.

But this is not the only advantage of the fragmented regulatory model. Nowadays scholars have moved past the notion that the solution to regulatory failures is to transform the financial regulators into a single consolidated authority. Instead they put emphasis on the advantages of having several agents collecting information rather than one.

The benefits of having several agents collecting and processing information have already been highlighted by the Marquis de Condorcet in his Jury Theorem, proving that a group of lay jurors deciding by majority rule can reach the correct result more often than one expert deciding alone.91

It is thought that multiple agents act as a sort of insurance – if one agent misses an important piece of information there is greater likelihood that another agent will spot it. Much like in nature, diversity is a natural way to mitigate risks.

However, several scholars have pointed out that when agents have a correlated bias, vote strategically, or where there is no consensus on what is the right answer, the Jury Theorem may no longer hold.92

The downside for having several agents includes greater costs associated with duplication, and socially unproductive battles over power and prestige caused by overlapping mandates.

Increasing the number of agents involved in information-gathering and processing reduces the incentives each agent has to collect and process the information. This is a form of a collective action problem. As the number of agents goes up, so do their incentives to free-ride. This is also known as the “rational ignorance” effect. Increasing the number of agents increases the quantity of the signals received, as there are more agents collecting and processing the information, but reduces the quality of these signals.93

This does not hold true if the pieces of information collected by those agents complement each other. In such cases collecting a piece of information increases the marginal value of other

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91 See MARQUIS DE CONDORCET, AN ESSAY ON THE APPLICATION OF MATHEMATICS TO THE THEORY OF DECISION-MAKING (1785), reprinted in CONDORCET: SELECTED WRITINGS 33 (Keith M. Baker ed., 1976). These insights have been brought up and strengthened by Stephenson: Stephenson, supra note 8, at 1462-63.
92 Stephenson, supra note 8, at 1464.
93 Id., at 1464-65.
pieces of information collected. Dividing information-gathering tasks among several agents may prove beneficial in these cases.  

When the policy decision is based on aggregated information which streams from different agents, the timing of the agents’ inputs should be taken into account. The main issue here is whether the inputs are simultaneous or sequential. This makes a difference as it determines whether agents can observe other agents’ inputs before taking the decision on how to act.  

On the one hand, sequential information systems are useful as each agent can build on past knowledge and develop it instead of starting from scratch. On the other hand, sequential decision-making systems suffer from the phenomenon of “herding”. Decision makers rely on past information which shapes their beliefs about reality and shapes the way in which they collect future information. In a sense it robs decision makers of their ability to make their own unbiased judgment of the reality.  

If the information is complicated the problem becomes more complex. If the agent has new and better information he will use it, but if the information is complicated, as is very often the case with information relating to financial issues, the agent may simply choose to rely on the existing information and decisions instead of investing time to research and study the new pieces of information.  

The major problem with the fragmented financial regulatory model from an information-flow point of view relates to coordination, communication, and cooperation between the different regulators acting in the financial markets.  

A decentralized organizational structure is effective when the tasks of the organization are self-contained. The decentralized organization is usually used when the organization is  

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94 Id., at 1467.  
97 Vermeule & Watson, *supra* note 95, at 33–35.
designed around different products. In such a structure, managers worry only about the products or services for which they are responsible. 98

This is useful when the environment is complex as it segments the environment into products and allows for specialization. However, the problems begin when these products affect each other, as happens with financial products or firms which have a systemic influence on each other and on the entire market.

One of the biggest problems is that each manager sees only his own product or geographic area, and knows that his innovations and actions are restricted to his area of specialization. The autonomy of each division makes it very difficult to coordinate the whole.

Coordination is essential in times of crisis and uncertainty. Decentralized organizations have no formal way to coordinate and facilitate information-flow.

This is exactly the problem of the fragmented financial regulatory model; it faces a coordination problem.

In order to achieve coordination, an understanding of the obstacles in the way to cooperation is needed. The main obstacle is that each authority seeks to maintain its independence. Other than that there are internal organizational procedures and cultures which are not easily synchronized. Moreover different organizations have different goals. As Van de Ven put it: 99

‘From an agency’s point of view, to become involved in an inter-agency relationship implies (a) that is loses some of its freedom to act independently, when it would prefer to maintain control over its domain and affairs, and (b) that it must invest scarce resources and energy to develop and maintain relationships with other organizations, when the potential returns on this investment are often unclear or intangible’ (p. 28).

It is evident that cooperation only begins when a perceived problem is shared across agencies. Moreover, the agencies have to frame the issue as something that can be solved through cooperation. Unless cooperation is grasped as the solution to the problem, cooperation

98 Duncan, supra note 14, at 65.
will not move forward. Once cooperation is considered to be the solution, the process is ignited.  

The second step is to determine whether there are enough resources to handle the problem jointly. A recruitment of staff might be needed, money should be raised upfront, and budgets need to be allocated.  

The third thing that needs to exist in order for agencies to cooperate is a capacity in each agency to accept cooperation. This depends on each agency’s routines, infrastructure, etc. Another issue that seemed to matter is the legality and legitimacy of the cooperation.  

If agencies have all of these preliminary requirements, cooperation can be achieved. Cooperation is greatly induced when there is external demand for cooperation, be it public pressure or an explicit legal demand.  

Problems, by themselves, did not trigger the search for new solutions. Nor did performance demands by themselves lead to cooperation... Problems coupled with demands for improved performance in the domain of the problem did launch districts on the path to participation in cooperation...” (p. 112)

Without demand for cooperation, it is likely that each financial regulatory authority would take measures to preserve its independence, which in turn would result in keeping information to itself.  

As each player in the information-transferring game is interested in increasing his marginal benefits from information-sharing, each player would ask himself what is his expected utility from sharing the information with an external authority. Meaning, each one will ask himself; “If I do not share the information, what will the final decision be, and what is my expected utility from the expected decision?” Then he will ask himself the opposite question, i.e.; “What will happen if the information is shared, and what is the personal utility that will come from sharing the information?”

100 Weiss, supra note 17, at 111.  
101 Id., at 111: This research found that if resources existed and were channeled towards cooperation, then the process moved forward.  
102 Id., at 111.  
103 Id., at 112.
The player’s marginal benefit from sharing one more piece of information is the difference between the two questions, i.e. the difference between his expected utility if the information is shared versus his expected utility if the information is not shared. This leads to the conclusion that in order to induce information-sharing, there is a need to increase the incentives for people to share the information they hold.

This goal can be achieved by doing one of two things: try to incentivize agents in the right direction by enlarging their marginal information-sharing benefits; or threaten them with punishment in order to enlarge their costs for not sharing information. Either way we are in need of legal mechanisms which will induce information-sharing between agencies.

In the absence of a legal coordination mechanism to facilitate information-exchange between the two regulatory authorities, we are relying on the personal assessments of the regulators as to the personal or organizational benefits they might incur if they do share the information. Often the result of this assessment will not equal the level of information-sharing considered necessary for sound decision-making from a social welfare point of view. That is why an external legal demand for information-sharing is essential.

Indeed when we talk about cooperation between different financial regulatory authorities, we find that each country or jurisdiction has embraced legal mechanisms which demand or enable such cooperation.

An example of an obligatory legal demand for exchange of information may be found in the US where Section 24 of the Securities Exchange Act of 1934, which was later amended and expended by the Dodd-Frank Wall Street Reform and Consumer Protection Act – 2010. The act dictates coordination between authorities including the exchange of information.

Another example may be taken from Italy; Article 4 to the Consolidated Law on Finance mandates the exchange of information, consultation, and cooperation between different authorities on subjects which fall under their overlapping mandates and competence.

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104 This discussion is similar to the discussion proposed by Stephenson (2011) with regards to the question of information-gathering, see Stephenson, supra note 8, at 1430 and onward.

105 This discussion is similar to the discussion proposed by Stephenson (2011) with regards to the question of information-gathering. See id., at 1430 and onward.


After such demand for cooperation exists there are a few ways in which cooperation may be organized; lateral relations can be used to form joint forums where managers interact and share information, or by nominating liaisons to connect between two separate departments. When the level of coordination has to go up, an integrator may be used.

In extreme cases where cooperation is essential for adequate and stable functioning of the regulatory body and the markets, consolidation is required. This is the case of the central bank and the banks’ supervisory function, as cooperation between these two bodies is vital, and as the smooth functioning of the market as a whole is heavily dependent on the said cooperation, many countries have decided to bring the risk of lack of cooperation to a minimum and merge these two functions into one regulatory body, even though they are aware of the flaws of the consolidated structure and its inability to facilitate information-flow. It is a clear case in which society refuses to accept the risk of lack of coordination as the expected results of lack of coordination are too dire. Having said that, we should keep in mind that consolidation sits on the extreme spectrum of the possible solutions for making financial regulatory authorities cooperate with one another.

Another softer cooperation enhancing tool is having different authorities signing agreements for cooperation, also known as Memoranda of Understanding (MOUs). These MOUs define the interaction between the authorities and the ways for cooperation and information-exchange.

An example of a softer legal mechanism for information-exchange may be taken from Australia where a number of MOUs have been signed by the different financial regulatory authorities; for example: Article 5-10 to the Memorandum of Understanding between the Reserve Bank of Australia and the Australian Prudential Regulation Authority facilitates the sharing of information between the two authorities.

Joint forums or committees, such as the US Financial Stability Oversight Council (established under title I of the Dodd-Frank Act), the Federal Financial Institution Examination Council, and the President’s Working Group on Financial Markets or the EU’s Joint Committee, which was established under Articles 54 to 57 of the European Supervisory

\[\text{\footnotesize 109 See THE GROUP OF THIRTY, } \text{supra note 37, at 188-96.}\]
\[\text{\footnotesize 110 MoU RBA and APR, 12 Oct., 1998 (Austl.), Art. 5-10.}\]
\[\text{\footnotesize 111 Formed by legislation P. L. 95-630, 92 STAT, 3641.}\]
\[\text{\footnotesize 112 Created by President Reagan through Executive Order 12631, March 18, 1988, 53 FR 9421.}\]
Authorities, are also very helpful in inducing information-flow between organizations, as they create physical interactions between people from different authorities.

When we discuss cooperation, we should also consider the physical interactions between employees. Even the physical structure of the office matters; the office should be designed in such a way that people who need to share information interact with one another frequently.

Having people use the same space for coffee breaks or meals further increases the chance for information transmitting between employees based on informal conversations.

The reason that the physical distance affects information-sharing has to do with the costs of collecting information. The greater the distance between employees, the higher the efforts and the costs they have to invest in collecting certain types of information. The type of information which is difficult to obtain from afar is described in the literature as “soft” information. Such information may include, for example, face-to-face impressions of the decision-makers gained from talking to the employees of the regulatory body, or inferences with regards to the regulated firms which cannot be transmitted accurately from far away. The greater the importance of soft information to the regulatory process, the more severe are the consequences of keeping a long distance work relationship.

The literature has long recognized the value of “tiger teams” - teams which dedicate their efforts to solving specific problems while not delaying the project as a whole - to information-

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114 See generally: Bozeman et al., supra note 57, at 384-405.


116 Alam et al., infra note 146, at 2.

117 Id., at 2.
flow. These “teams” could be a partial answer to the problem of cooperation between different authorities especially if team members are required to meet regularly and have multiple close encounters with one another.

As informal communication networks are the best source of scientific knowledge for managers, and as organizations which are more flexible facilitate information gathering and sharing, forming “tiger teams” could be useful in enhancing information-sharing and flow.

What we sometimes see in reality is that the organizational structure of the regulatory body begins with a forming law of the authority which does not say much about how the authority should be structured, i.e. it does not say much about the different departments which the authority should have. What we then find is organizational charts which, even though not dictated by law, soon rule with the authority of law, since the law is silent on this issue.

These organizational charts coupled with organizational routines and procedures have an influence on the information-flow inside the organization. This is where tiger teams come in, even though in most cases the formation of tiger teams is not dictated by law they can be used to facilitate cooperation and information-flow between different regulatory bodies.

In general it is safe to say that the physical distance between different people who have to work together and exchange information should be brought to a minimum. This understanding should affect the current regulatory structures of several jurisdictions, including the US federal financial regulatory structure and the EU’s newly founded financial regulatory institutions. These structures are discussed below as a test case regarding the revision required in order to facilitate information-flow. They are then compared to one another and to the structure of three other jurisdictions, representing three out of the four regulatory structures that exist in the world today: the UK, which follows the Twin Peaks Approach; Israel, which follows the Institutional Approach; and Switzerland, which follows the Consolidated/Integrated Approach. The fourth approach, the Functional Approach, is very similar to the Institutional Approach with regard to the physical design of the financial regulators and for this reason, in order to avoid duplication, it is left outside this comparison.

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118 See as early as: Thomas J. Housel et al., Business Process Reengineering at Pacific Bell, 21 STRATEGY & LEADERSHIP 28 (1993).
119 Bozeman et al., supra note 57, at 384-405.
120 See THE GROUP OF THIRTY, supra note 37 for examples of organizational charts.
5. Information flow and the financial regulatory structures in the US (federal) and the EU

This subchapter analyzes the existing supervisory models in the US and the EU, in light of the previous chapters. It points out their strengths and weaknesses and offers a solution for the latter.

By way of background, a brief description of the regulatory institutions in the US and in the EU markets is provided below.

5.1 The Financial Regulatory Structure in the US (Federal)

Many of the changes in the US financial regulatory structure over the years were implemented in response to a financial crises. The same happened in the wake of the crisis of 2007-2009. On February 10, 2009, (then) Treasury Secretary Timothy Geithner highlighted the key problems in the architecture of the US financial regulatory architecture:

“Our financial system operated with large gaps in meaningful oversight, and without sufficient constraints to limit risk. Even institutions that were overseen by our complicated, overlapping system of multiple regulators put themselves in a position of extreme vulnerability. These failures helped lay the foundation for the worst economic crisis in generations.”

The US federal financial regulatory structure underwent another reform, and now includes the following supervisory bodies:

The Federal Reserve (FED), the Securities and Exchange Commission (SEC), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC),

121 Jill M. Hendrickson, see supra note 2.
123 First established in 1913 by the regulation of bank reserves (Federal Reserve Act, P.L. 63-42, 38 STAT, 251, § 12 U.S.C. 226). Later on its authority was extended by the Gramm-Leach-Bliley Act (Gramm Leach Bliley Act, P.L. 106-102) to serve as an umbrella regulator for holding companies. The Dodd-Frank Wall Street Reform and Consumer Protection Act (see supra note 107) assigned the FED with regulation power over all financial firms in the American market that are considered systemically important by the Financial Stability Oversight Council.
124 Established in 1934 by the Securities Exchange Act of 1934 (see supra number 106).
the Commodity Futures Trading Commission (CFTC), the Federal Housing Finance Agency (FHFA), the Bureau of Consumer Financial Protection and the National Credit Union Administration (NCUA).

Most of these regulators have a presence in Washington D.C. (except for the NCUA which has offices only in Albany NY, Alexandria VA, Atlanta GA, Austin TX and Tempe AZ), but the regional offices of these regulators are not necessarily located in the same states.

Following the coordination problems that led to the last financial crisis, the US established numerous interagency task forces to study specific market failures and report to Congress. Three of these interagency bodies are permanent and serve as the main coordinating mechanism between the different federal financial regulatory authorities: the Financial Stability Oversight Council (FSOC), the Federal Financial Institution Examinations Council and the President’s Working Group on Financial Markets.

Even though the Administration realized that the abundance of regulatory authorities and lack of coordination between them had contributed to the crisis, the reform did not remedy this problem.

An examination of the banking sector alone reveals that the dual banking system requires each depository institution to be subject to regulation by its chartering authority (state or federal) and to regulation by several other federal and state financial regulators. Since all depository institutions are also federally insured, they are also regulated by at least one primary federal regulator (usually by the OCC). Furthermore, each type of institution is subject to several federal regulatory authorities in addition to the applicable state authority.

This complicated system was described in a 2010 Congressional report:

129 Established under title X of the Dodd-Frank Wall Street Reform and Consumer Protection Act (see supra note 107).
130 Established under the US’s congress under the Federal Credit Union Act of 1934 (P.L. 73-467, 48 STAT 1216).
131 Established under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act (see supra note 107).
132 Established under the Financial Institutions Regulatory and Interest Rate Control Act of 1978 (P.L. 95-630, 92 STAT 3641).
133 Established under President Reagan’s Executive Order 12631, 1988.
The primary federal regulator of national banks is their chartering authority, the OCC. The primary federal regulator of state-chartered banks that are members of the Federal Reserve System is the Board of Governors of the Federal Reserve System. State-chartered banks that are not members of the Federal Reserve System have the FDIC as their primary federal regulator. Thrifts (both state and federally chartered) had the Office of Thrift Supervision as their primary federal regulator, until the Dodd-Frank Act abolished the OTS and distributed its responsibilities among the OCC, the FDIC, and the Fed. All of these institutions, because their deposits are covered by FDIC deposit insurance, are also subject to the FDIC’s regulatory authority. Credit unions–federally chartered or federally insured–are regulated by the National Credit Union Administration, which administers a deposit insurance fund separate from the FDIC’s.’ (p. 14).

To further complicate the federal financial regulatory system, it appears that parts of the market are still unregulated, including the foreign exchange markets, US treasury securities market and private securities markets.

5.2 The EU's Financial Regulatory Structure

Since January 2011, regulation of financial services across Europe has been done by three European supervisory authorities: the European Banking Authority, the European Securities and Markets Authority, and the European Insurance and Occupational Pensions Authority.

An additional institution, the European Systemic Risk Board (ESRB), was formed in order to function as a European systemic risk regulator, supervising macro-prudential issues.

As of 2012, the European Central Bank has received more powers with the formation of the Banking Union and the creation of the Single Supervisory Mechanism, which was formed based on art. 127(6) to the Treaty on the Functioning of the European Union, and which transfers

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135 Id., at 25-27.
136 For the establishing law see supra note 113.
137 For the establishing law see supra note 113.
138 For the establishing law see supra note 113.
139 For the establishing law see supra note 113.
micro-prudential supervisory tasks of banks which belong to the Euro area to the European Central Bank. 140

All of these supervisory authorities play a role in setting down common guidelines for local European supervisors in each state. They have the power to investigate and, if needed, to issue suggestions for action to the local European supervisors in each member state.

As for their physical presence, the European Banking Authority (EBA) is based in London, the European Securities Market Authority (ESMA) is based in Paris and the European Insurance and Occupational Pensions Authority (EIOPA) is based in Frankfurt.

These regulators are coordinated mainly through the Joint Committee established by Articles 54 to 57 of the European Supervisory Authorities. 141

The committee targets consistency between sectors and aims to reach joint positions on how to regulate financial conglomerates and other cross-sectoral issues. 142

5.3 Information-Flow Analysis of the Financial Supervisory Structures in the US (Federal) and the EU

Given the findings presented in this paper, it seems that dividing the financial regulatory tasks among several supervisory authorities where each specializes in a specific market segment, as done in the US and the EU, is essential in order to increase information-flow.

As the division of supervision according to the nature of the supervised firm is likely to produce arguments over mandates for supervision, more information will flow upwards in each regulatory institution, eventually reaching the decision makers and the coordinating committees and working groups. Such information may come from the lower levels of employees in each regulatory body, but it might also come from the industry.


141 The regulation is commonly referred to as “the European Supervisory Authority (ESA) Regulations” and consists of the pieces of regulation mentioned supra note 113.

Overlapping regulation creates hardship for the regulated firms. In turn regulated firms will bring the issue of overlapping or contradictory regulation to the attention of the regulators who issued the regulation. This is likely to ignite a discussion between the regulators and the regulated firms in order to adjust the regulation and make it coherent. Creating a dialogue between different regulatory institutions is very good for information-flow.

In addition, having a few regulatory bodies with somewhat overlapping responsibilities minimizes the chances that a market failure can be overlooked. As discussed before, due to the fact that regulation of financial markets is a complicated task, and given the fact that sometimes the prediction and prevention of a financial crisis lies in the small details, it is beneficial to have a few regulatory bodies examining the market and offering different solutions for supervision. Diversity in this case is a wanted phenomenon.

The fact that the establishing laws of the EU’s financial regulatory authorities have clearly defined their goals is another advantage for the new EU financial regulatory structure, as each authority can adjust its information-gathering efforts to fit its goals. This element is partly overlooked by US regulation. Some of the federal regulatory authorities define their goals in their strategic plans. While this is obviously better than not defining goals at all, the best system is where goals are laid out in the establishing laws, since in comparison with annual strategic plans, laws are less likely to be changed often. Furthermore, when the goals of a financial regulator are not defined by the legislator but by its management, there is a danger that it will miss out on the bigger picture. Moreover, when setting its own goals the regulator might also be directed by other motivations (such as the need to set minimal goals which are easily reached).

Although both the US (federal) and the EU have adopted a fragmented model for their financial regulatory authorities, both jurisdictions still have a few weaknesses that might hinder the fast flow of information.

\[^{143}\text{Sec. 11-13 to Regulation of the European Parliament and of the Council 1093/2010, supra note 113; Sec. 10-11 to Regulation of the European Parliament and of the Council 1094/2010 supra note 113; and Sec. 11-12 to Regulation of the European Parliament and of the Council 1095/2010 supra note 113.}\]
The main problem with the structure chosen for the federal US regulatory institutions is that it is indeed too fragmented.

Recall that when a regulatory structure is fragmented and comprises several agents collecting market information, duplications and unproductive battles over prestige and power multiply. This is especially true when these agents have overlapping mandates, as is the case with the US federal regulatory structure.

Furthermore, where several agents are responsible for collecting information with regard to the same market sector, their incentive to collect and process the information decreases. In fact, the greater the number of such overlap, the greater their incentive to free-ride on information collected by others. This is detrimental for good regulation, for several reasons: (a) diversity, which is beneficial for information flow, is lost; and (b) the sequential decisions of the regulators might be afflicted by “herding”: their beliefs will be shaped and colored in a certain way that fits the information on which they rely.

Recall also that coordination is the greatest problem with the diversified regulatory model. Although a structure with many regulatory agencies might seem tempting at first glance, it is in fact counterproductive. Having too many agents might cause confusion as to who regulates what, and might therefore cause parts of the market to be unregulated.

Furthermore, when the regulatory sphere is too fragmented there is a risk that each regulator will focus exclusively on its own regulatory mandate, missing the bigger picture.

The problem escalates if the regulators are not in close geographical proximity. As mentioned, the field offices of the US (federal) financial supervisors, which are responsible for a vast portion of regulatory work, are scattered across the US, not always in the same states. This is very problematic from the point of view of information flow.

This is also the biggest problem with the current structure of the European financial supervisory institutions; their inadequate information-flow may well be the result of sufficient cooperation.
It is not at all clear that having joint committees or forums is sufficient to ensure information-flow. Committees usually do not meet on a day-to-day basis, and minor coordination issues may not even reach the committee and are often resolved on the spot. While a committee is critical in order to solve major coordination problems, physical proximity is the only and optimal solution for information-flow and everyday coordination problems, which must be resolved in order to allow for better information to reach decision makers. As discussed in the previous chapters, having a full picture of the situation in all financial markets is essential.

The biggest weakness of the current European financial supervisory structure is the physical distance between the different regulators. This weakness is shared by the US federal financial regulatory system, and perhaps even magnified by the large number of regulatory institutions.

As previously stated, close physical presence is important in order to increase information-flow. In fact informal gatherings of employees are the greatest enhancement tool for the transmission of information.144

Several studies have shown that the amount of communication between employees in organizations and the ease of communication affect task performance as well as personal satisfaction in the workplace.145 Several others have acknowledged the importance of the physical space in which the workplace is organized. These scholars have studied the effects of physical dispersion on the organization’s performance and have made recommendations as to the “microgeography” of the office.146 All of these studies point in one major direction; in order to increase information-flow within and between organizations, you must minimize the physical distance between the employees and allow them to interact formally and informally with one another. The current physical distance between the various European financial regulators, each situated in a different country, and between the US federal regulatory field offices, each located

144 Truran, supra note 20, at 17.
145 See as early as: William H. Form, Technology and Social Behavior of Workers in four countries: A sociotechnical perspective, 37AM. SOCIOLOGICAL REV. 727 (1972), and Eric M. Eisenberg et al., Involvement in Communication Networks as a Predictor of Organizational Commitment, 10 HUMAN COMM’N RES.179 (1983).
146 As early as: Caplow, supra note 24 followed also by Hall & Tolbert, supra note 25. See also: Zinat S. Alam et al., Does the Location of Directors Matter? Information Acquisition and Board Decisions, 49 J.FIN. QUANTITATIVE ANALYSIS 131 (2014).
in a different state, does not allow for such interactions between employees to occur. The adverse affect that this has on information-flow between the different regulators is tremendous.

An information-flow comparison between the financial regulatory structures of the US and the EU and among them and the structures in Israel, the UK and Switzerland, reveals the following similarities and differences:

<table>
<thead>
<tr>
<th>Number and nature of main supervisory authorities active in the financial markets</th>
<th>The US Federal Financial Regulatory System</th>
<th>The European Union</th>
<th>The United Kingdom</th>
<th>Israel</th>
<th>Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>8: The Federal Reserve, Office of Comptroller of the Currency (OCC), Federal Deposit Insurance Corporation (FDIC), National Credit Union Administration (NCUA), Securities and Exchange Commission (SEC), Commodity Futures Trading Commission (CFTC), Federal Housing Finance Agency (FHFA), Bureau of Consumer</td>
<td>3: the European Banking Authority (EBA), the European Securities Market Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA).</td>
<td>2: the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA).</td>
<td>3: The Bank of Israel, the Israeli Securities Authority (ISA) and the Capital Markets, Insurance and Savings Department within the Ministry of Finance.</td>
<td>1: the Swiss Financial Market Supervisory Authority (FINMA).</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
<td>----------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cooperation mechanisms</strong></td>
<td>The Financial Stability Oversight Council (formed by title I of the Dodd-Frank Act),¹⁴⁷ the Federal Financial Institution Examination Council,¹⁴⁸ and the President’s Working Group on Financial Markets.¹⁴⁹</td>
<td>The Joint Committee formed by Articles 54 to 57 of the European Supervisory Authorities.</td>
<td>No coordination mechanisms in place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Room for overlapping supervisory mandates</strong></td>
<td>Room for overlapping mandates is</td>
<td>Room for overlapping mandates is</td>
<td>Room for overlapping mandates is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None existing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹⁴⁷ For the establishing law see supra note 107.
¹⁴⁸ For the establishing law see supra note 132.
¹⁴⁹ For the establishing law see supra note 133.
¹⁵⁰ MoU for Cooperation and Exchange of Information between the Supervisor of Banks, the Israeli Securities Authorities and the Capital Markets, Insurance and Savings Department (June 24, 2007) (Isr.).
¹⁵¹ L’Autorità federale di vigilanza sui mercati finanziari (Legge sulla vigilanza dei mercati finanziari) [LFINMA]. Federal Act on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act) [FINMASA], June 22, 2007, RS 965, Chapter 2, Sec. 1, Art. 9(1)(i) (Switz.).
<table>
<thead>
<tr>
<th>mandates/diversity in regulation</th>
<th>present.</th>
<th>present.</th>
<th>present.</th>
<th>present.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear organizational goals</td>
<td>Defined in the forming laws. 152 Not defined by law for the Office of Comptroller of the currency, the FDIC, and the CFTC. 153</td>
<td>Defined in the forming laws. 154</td>
<td>Defined in the forming law. 155</td>
<td>Defined for the Israeli Securities Authority 156 and for the Bank of Israel 157 Not defined by law for the Capital Markets, Insurance and Savings Department within the Ministry of Finance.</td>
</tr>
<tr>
<td>Physical presence</td>
<td>Most authorities have their headquarters in Washington D.C (the only exception is the NCUA). However, most authorities also have field offices scattered across different states in the US (not necessarily)</td>
<td>The authorities are distributed between three different countries and cities: London, Paris, and Frankfurt.</td>
<td>Both authorities sit in London, but not in the same compound.</td>
<td>All authorities sit in Jerusalem in the same area and all have branches in Tel Aviv which are a short walking distance from each other.</td>
</tr>
</tbody>
</table>

152 The Federal Reserve Act, the Dodd-Frank Act (see supra note 107 and supra note 123), the Housing and Economic Recovery Act of 2008 (see supra note 128), Federal Credit Union Act of 1934 (see supra note 130) and the Securities Exchange Act of 1934 (see supra note 106).
153 Defined through the strategic or organizational plan for each of these regulatory authorities.
154 See supra note 113.
156 Defined in The Securities Law, 5728 – 1968, SH No. 541 p. 234 (Isr.).
157 Defined in the Bank of Israel Law, 5770 – 2010, SH No. 2237 p. 452, Sec. 3A (Isr.).
158 See: l’Autorità federale di vigilanza sui mercati finanziari (Legge sulla vigilanza dei mercati finanziari) [LFINMA], supra note 151, chapter 2, sec. 3, art. 21 (2) (Switz.).
A comparison between the US and the EU and between these two systems and the UK, Switzerland and Israel, taking the above sub-chapter into account, highlights the following results:

The US, the EU, Israel, and the UK divided the responsibility for financial regulation among several authorities and in all of these three jurisdictions the authorities maintain somewhat overlapping responsibilities for regulating the markets (some more than others). From an information-flow point of view, this is superior to the consolidated structure followed by Switzerland which decreases the amount of parallel processing of information. The US structure is too fragmented and is expected to suffer from greater coordination problems than the structures of all other jurisdictions reviewed in this paper. The EU and Israeli structures are more fragmented than the structure of the UK, but are not over-fragmented, and are thus expected to be more beneficial for information-flow.

In most cases the authorities in the five jurisdictions reviewed above have their goals and objectives defined by law, which is beneficial for information-flow. The greatest exception is the US, because the goals for some federal regulatory authorities are not defined by law but rather by the strategic plans of these authorities themselves. The only exception outside the US is the Israeli Capital Markets, Insurance and Savings Department within the Ministry of Finance, which defines its goals in its financial statements, strategic plans and internal memoranda.159

The US, EU, Switzerland, and Israel have coordinating mechanisms in place in order to facilitate cooperation and exchange of information, while such mechanisms have not been found for the UK.

In addition, there are differences in the physical presence of the regulatory authorities in each jurisdiction which, as has been discussed in this paper, impact the amount and speed of information-flow; according to the theoretical framework discussed in this paper, when looking

159 See supra notes 150–157.
at the physical presence of the regulatory bodies we would expect to find that information-flow in the Israeli system and in the Swiss system is better than in the UK, and that information-flow in all three is superior to that among the US federal regulatory bodies and among those of the EU.

These results are even stronger when we rate the jurisdictions according to the framework which is presented at the beginning of this paper. The intuitions from this framework can be put into a comparative table, keeping in mind that the following analysis is based on the intuitions in this paper and not on empirical data.

For the purpose of the next table, a plus sign represents a positive relationship to the suggested framework, where two pluses represent an even stronger relationship, and a minus sign represents a negative relationship to the suggested framework.

<table>
<thead>
<tr>
<th>Compatibility with the framework presented at the beginning of this chapter</th>
<th>The US’s Federal Financial Regulatory System</th>
<th>The European Union</th>
<th>The United Kingdom</th>
<th>Israel</th>
<th>Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where possible, vote for a structure which ties policy and specialization together.</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Where possible, allow multiple sources of competing information to reach the hands of the decision maker.</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>A less rigid and hierarchical regulatory structure would be beneficial over a rigid one.</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>A structure which will enable and encourage cooperation will be beneficial to a structure which will inhibit cooperation.</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>An organizational structure which increases informal interactions between employees should be preferred over any other structure.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>An organizational structure which sets clear organizational goals should be preferred over any other structure.</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>An organizational structure which allows more face-to-face interaction between employees should be preferred to</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
</tbody>
</table>
one that isolates them from one another.

| Choose a structure that does not over-fragment supervisory functions | - | + | + | + | ++ |

The above comparison between the different jurisdictions supports the intuition that the main structural problem of the US federal financial regulatory system is over-fragmentation, and that a severe coordination problem between the regulators can be expected.

The main drawback of the EU’s new regulatory structure is the fact that the authorities are not located in the same cities or even countries. As was shown, the US suffers from a similar problem, but since most of its regulators have an office in Washington D.C., the situation in the US federal financial regulatory system is expected to be better than in the EU.

No empirical research has been conducted in this analysis, but in future empirical work one can expect to find faster and more significant information-flow in the Israeli structure as compared to that of the US, UK, Switzerland, and the EU.

To conclude, an analysis of the American and European structures and a comparison with three other jurisdictions emphasizes the advantages of the fragmented structure; its main benefits relate to diversity, less dilution of information and a less rigid structure resulting from the fact that the supervisory relationships are reduced by at least one layer. As discussed in this paper all these are beneficial for better information-flow and help increase the chances that the right kind of information will reach the hands of the decision makers.

However, the analysis also shows the weakness of the current US federal and EU’s financial regulatory structures with regard to information-flow, and in particular the problem of cooperation and coordination between authorities.
Because of its over-fragmentation, the current federal US financial regulatory structure is expected to face serious coordination problems. It is therefore recommended to consolidate the federal financial regulatory authorities that are charged with the same market segment into a single authority. After such consolidation, federal regulation of the financial market would be made by three distinct, sector-specific regulators, and the over-fragmentation of the market would be amended.

In addition, the physical distance between the regulatory bodies makes it harder to exchange informal and “soft” information, which is critical for ongoing regulatory work. This last point is also the biggest weakness of the EU’s financial regulatory system. It is therefore recommended to locate the different regulatory institutions of each of the EU and the federal financial regulatory system of the US, in a single physical compound.
6. CONCLUSIONS

This paper set out to investigate different types of organizational structures in order to find the one which best facilitates information-flow within and between different financial regulatory institutions.

The pros and cons of the consolidated structure with regards to information-flow were reviewed and compared with those of the fragmented structure, to reveal that in the field of financial regulation, the option of a fragmented regulatory structure is better equipped to facilitate the kind of information-flow needed in order to prevent or stop a financial crisis once it has occurred.

This conclusion results from two major attributes of the fragmented versus the consolidated model. First, having diversity of regulatory bodies minimizes the chances that market failures will go unnoticed; and second, the structure itself is less hierarchical by at least one layer as compared with the consolidated structure, and thus helps reduce dilution of information and rigidity. As discussed in this paper, the flatter the organization’s pyramid, the easier the flow of information.

The problem of cooperation between several different regulatory authorities was brought up in this paper as a shortcoming of the fragmented structure. However, several solutions to reduce this problem have been made, including signing agreements between the different regulatory bodies, legal demands for cooperation, and the formation of “tiger teams”.

As emphasized by this paper, the consolidated structure is best used in financial regulation in cases where full cooperation between the different authorities is detrimental for the authorities’ work, such as the consolidation of the banks’ supervisory function and the central bank responsible for monetary policy.

Next, this paper reviewed the structure of the US federal financial regulatory system and the new EU financial regulatory bodies, compared them to the structure in the UK, Israel and Switzerland and to the general framework suggested by this paper, and concluded that although having several different financial regulatory institutions is beneficial, the physical distance between them might be detrimental for cooperation and information-exchange which are essential in order to prevent a financial crisis. This problem is magnified in the federal American financial regulatory system due to its over-fragmentation.
It is therefore advisable to consolidate some of the US authorities (those dealing with the same market segment) and to locate all authorities at the same physical compound.

Room remains for future empirical research that will test the strength of the proposed framework for increased information-flow.